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BY
SIR ANTHONY BOWLBY, K.C.B., K.C.M.G., K.C.V.O.,
LATELY CONSULTING SURGEON, BRITISH ARMIES IN FRANCE.

IT is about eighteen years since I addressed the Abernethian Society after my return from the South African war, where I had been in surgical charge of the Portland Hospital. I had at that time got to know much of the work of the Army Medical Service, and subsequently, as consulting surgeon to Millbank Military Hospital and in other ways, I have kept in touch with this branch of our profession. It was probably partly in consequence of this that when the war was about a week old I was offered by Sir Arthur Sloggett the appointment of consulting surgeon in France, and my friend Sir George Makins was also selected. I have never been able to learn why the British Expeditionary Force did not require our services at once, but the fact is that it was past the middle of September before they allowed us to leave England, and it was the 23rd of that month before I sailed for Havre.

I lost no time in going to Paris, for it was there that the head quarters of the lines of communication was situated, and I was soon visiting various hospitals in or near that city. The battle of the Aisne was drawing to a close and our casualty clearing stations were engaged in field-ambulance work and in entraining wounded. During the fighting at Mons, in the retreat, and at the Marne they had not been employed, and at the Aisne also most of their kit and stores were not being utilized. We had as yet no motor ambulance cars. Many of the wounded came into Paris, but most of them were being sent to Rouen, so after a few days I went there and spent my time in the two general hospitals which were at work.

Everything I saw pointed to great difficulties in dealing with the wounded at the front, and I was deeply impressed by the condition of the patients on their arrival at the base hospitals. It seemed to me that I might be of more use further forward than at Rouen, and this feeling was very much accentuated when I learnt that the British army was leaving the Aisne and moving northwards. I therefore asked if I could not be of more service in that direction, and was much gratified to receive an order on October 12th telling me to report at general head quarters. I lost no time in obeying, and left early next morning for Abbeville. Beyond that town the roads were crowded with army transport of every kind, and I did not arrive at St. Omer until 5.30 p.m. on October 13th. It was getting dusk, but inside the town I met Major Poe, R.A.M.C., whom I had last seen at Rouen, and who had arrived in charge of our very first motor ambulance convoy. He told me that he was just off "to a place called Hazebrouck," that there had been fighting on a large front that day, and that he expected to bring in 420 wounded. Little did he or I think that this was the opening day of what would ever after be known as the "First battle of Ypres."

I had arrived in the nick of time. Early next morning I was at the office of the medical department and found that Colonel (later Major-General) Sir T. J. O'Donnell had recently been appointed to be "D.M.S., Front," and was the senior officer at General Head Quarters at that time. I soon saw him and the Adjutant-General, Lieut.-General Macready, and explained that I had been sent out as consulting surgeon and that I wanted to stay at the front. It seemed to have been generally accepted that the only proper place for all consulting surgeons was the base, but as there were only two of us, and as Sir G. Makins was working hard at Boulogne, I did not have much difficulty in obtaining permission to stay and help with the 420 wounded who had arrived or were arriving at No. 1 Casualty Clearing Station in the Collège de St. Joseph. I was then supposed to have come to General Head Quarters temporarily, but, as it turned out, my stay lasted for the rest of the war.

I have only a few words more to say by way of introduction, but it is necessary to mention that I found the "D.M.S., Front" most helpful in every way and most sympathetic towards my proposals or suggestions. Later on he became the D.D.G. under Sir Arthur Sloggett, and when in 1916 he left us to take up the chief administrative appointment in India, he was replaced by Sir W. G. Macpherson. From all these officers I received every assistance and encouragement throughout the war, as I also did from their successors, Sir Charles Burtchaell and Major-General J. Thomson.

I think that my work was all the easier because my previous experience in South Africa enabled me to realize from the beginning that the Army Medical Service was essentially an integral part of the whole army, and that it must be considered always as a part which was intimately related to various other parts, and could not be considered as if it were a detached unit.

Thus it was the considered policy of the army before the war that no wounded should be retained near the front longer than was absolutely necessary, and that consequently they must be evacuated to the lines of communication on the first opportunity. The army had decided to get the wounded out of its way as soon as it could, and it did not wish to have large hospitals near the front which would require the transport of food and ordnance supplies on railway lines or roads urgently needed for military stores of every description. It had further to be realized that the "military situation" always dominated everything, and that the medical officer must not expect to be always furnished with a reason for decisions opposed to his own opinions. It is necessary to keep these facts in view in order to realize that radical changes in the surgery of the front could not be made by the Army Medical Service with a stroke of the pen, and that the decision on many matters did not rest with the Director-General alone, but was a concern of the General Staff also. It is not appreciated by many, for example, that the site of a casualty clearing station and the arrangements for the transport of wounded are matters which can only be settled in conjunction with the "Q. branch" of an army, or that the alteration of the whole policy of evacuation of sick and wounded was a matter which interested the General Staff.

Now we come to the ever famous "First battle of Ypres." During this fight our army had only a comparatively small number of men in the field—namely, seven depleted infantry divisions and three cavalry divisions. I am not going to describe the battle; it would take a great deal more than the time at my disposal. It began at Hazebrouck on October 13th, and was continued by the gradual advance of our troops until in the north we passed beyond Ypres. The country was at that time very pretty, with sloping hillsides and woods, and it may be interesting to you to know that at a place called Polygon Wood a number of horses used annually to be trained for the International Horse Show at Olympia. What happened during the next few weeks was that we and the French, and north of us the French Marines at Dixmude, and north of them the Belgians, were fighting very hard to stop an overwhelming mass of Germans, with an equally overwhelming mass of artillery, who attacked on the whole front from Bethune to the sea. The casualties that we suffered were in no way represented by the number of the wounded. In those days it happened over and over again that whole companies were practically annihilated. They stood their ground, they returned the fire of the enemy, they fought until they died, and that is why there were comparatively few wounded in proportion to the dead. But before they laid down their lives they killed by accurate and rapid rifle fire a sufficient number of Germans to ultimately stop the onset.

We had at first six clearing stations at work. One was in Ypres, but it was shelled out the first week and had to be taken to Hazebrouck, which was twenty miles back, where there was already another. At St. Omer, about thirty miles back, there was a casualty clearing station used as a sort of base hospital. One casualty clearing station was at Poperinghe, which is behind Ypres; one was at Bailleul; one was at Bethune. The last three were our only casualty clearing station units close to the battle, and the one in Bethune was shelled out before the end of November.

Now just let us look at the situation for a moment, and think of what the casualty clearing stations could do for the 13,000 men who were wounded in this fight. Each casualty clearing station consisted of a staff of only six medical officers, a commanding officer, and a quartermaster, and each had altogether eighty orderlies. They were equipped, on plans made during peace, merely with the intention that they should act as places through which the wounded could be passed from the field ambulances into a train, and they were never intended to do operative surgery. They had no beds, and only 200 stretchers; they had hardly any instruments; they had each one operating table; they had no sterilizing apparatus and very few towels; there were no gloves; there were no gowns. So when I arrived at the front on October 13th I realized that the more numerous field ambulances must do most of the emergency operations, and that anything on a large scale in the way of front line surgery was impossible for the moment. But it was very evident that as soon as the opportunity came there was much which might be done.

Officially, the first battle of Ypres lasted until November 17th, but it went on for a little longer than that. Early in November it was suggested that some beds might be got for the worst cases in the casualty clearing stations, and we got twenty beds to start with. That was a beginning, but when we got the beds we said, "It is no good having beds for sick patients unless you have nursing sisters!" The latter were not supposed to go to the casualty clearing stations, but when we got the beds we asked for them, and said, "Until you have sisters you will not get a sufficiently high ideal of work." We wanted to do things as well as they did them at any great civil hospital; so we got twenty beds to begin with, and we got five nurses to each casualty clearing station. That was towards the end of the battle, and at Christmas I came back for a few days to London, partly for leave, but I also came back with authority to obtain considerably more equipment for the casualty clearing stations.

So ended 1914, but, although the obvious changes in front line surgery were but small, the all-important principle had been conceded—namely, that the casualty clearing stations no longer existed merely for the purpose of evacuation, but were allowed to treat, operate upon, and retain wounded men. A small beginning, it is true, but one that contained great possibilities for the future.

1915.

I returned to France early in January, and from that time onwards we began to do regular operating work in casualty clearing stations and to train surgical staffs. At this stage we had to come to some definite decision as to the lines on which we were going to work. Were we going to ask that a large number of experienced operating surgeons should be sent out from England to take front line work at the casualty clearing stations, or were we not? I knew that there were many operating surgeons in England who were doing very hard work, and I knew that some of them who could do first-rate work at home were not young enough to stand the racket of casualty clearing station work night and day. And if we did get them out to France others would have to be found to take on their work, so my impression was that we ought to train our own staffs at the front. But I pointed out that it was no good training the staffs unless it was arranged that they should, as far as possible, not be changed. There is a tendency in all armies to move people about, and you might go to a unit one day and find So-and-so there; go the next, and find somebody else in his place. Well, from that time onwards we started training some men and casting out others whom we did not find good enough, until we had a satisfactory, capable, energetic lot of young surgeons, and I can never sufficiently express my admiration for the way in which the clearing station work was done by them.

The next event was that on March 10th there came the crowds of wounded from the battle of Neuve Chapelle. Up to this time the British army had expected daily to move forwards; the idea always was that we were going to advance, and the consequence was that because of this idea the supply of additional equipment to casualty clearing stations was postponed. The main object of the army was, of course, to beat the Germans, and everything was subservient to that, for the wounded man necessarily takes a secondary place in war. Supplies of munitions and food for the fighting men—that is the first consideration. I did not grumble, but I only tell you the fact that, as far as front line surgery was concerned, we were necessarily handicapped by the idea that we were going to advance. The next thing that handicapped me personally was that the General Staff had not yet learnt how far it could trust us civilians or our proposals to do operations at the front. When events were leading towards the Neuve Chapelle fight I knew beforehand that there was going to be a battle, but I was not told anything officially until the battle had actually begun. The fact was that in March, 1915, we had not yet got to the stage when those in authority turned to us and said to the consulting surgeons: "There is going to be a fight; it is going to take place on such a day and in such a place. Make the necessary surgical arrangements, and be ready for the treatment of so many wounded." That all came a little later, when the Directors of Medical Services of armies worked with the active co-operation of their respective consultants. So "Neuve Chapelle" arrived, and with it 12,000 wounded, for whom there were very few casualty clearing stations. It was impossible, of course, for the latter to deal thoroughly with the majority of the wounded; nor were they intended to do so, for at that time the policy of the British army was still the same as that of all the other armies when the war began—that is, "We will not in battle deal with wounded men at the front; operating work has got to be done at the base." And it must be recognized that evacuation to the base was very good and rapid in this battle.

On April 22nd the "Second battle of Ypres" began with the German "gas offensive." On May 9th our attack on Festubert began, and those fights overlapped. There were over 60,000 wounded in April and May. During that time we had ten casualty clearing stations at work; and I felt myself that the strain on them was greater than it had been even in the first battle of Ypres, while the surgeons at the base were no more than sufficient in numbers for their own work. So we went on during the spring and summer of 1915, training staffs to do the surgical work, putting the casualty clearing stations into huts or tents instead of in houses, increasing accommodation for operations, adding to the equipment, and as a result accomplishing all that was surgically necessary during times of comparative calm, but always overwhelmed when there was a great battle.

And then, after a short rest, came the next battle—"Loos," on September 25th—an attack by the First Army. Before that time my friend Colonel (now Sir) Cuthbert Wallace had come out, and he took one section of the front, which was in the area of the First Army, while I carried on in the Ypres section, in the Second Army. Just before the battle of Loos an "advanced operating centre," as it was called, was created near Bethune. It deserves to be mentioned, because this was the first time an advanced operating centre was pitched in front of existing casualty clearing stations for a battle. Unfortunately, it was swamped by the number of cases brought in, and the few casualty clearing stations could not do more work for the wounded than had been accomplished by the casualty clearing stations in previous battles.

During the year 1915 we had had altogether nearly 200,000 wounded, and of these about 50,000 were wounded at Loos and 60,000 were wounded in April and May at Ypres and Festubert.

After the battle of Loos Colonel Wallace and I felt that the time was ripe for a more definite recognition of the value of the front line surgery, and we therefore asked for an increase of the surgeons in the casualty clearing stations, and especially for reinforcements before heavy fighting began. We pointed out that the casualty clearing stations were now able to do very valuable work at the front so long as they were not overwhelmed, and our proposals were very cordially received by the Director-General.

So the year 1915 closed. It had been a time of disappointment for the army, because all our expectations of a general advance had come to naught, and now a period of trench warfare had become established. But as far as surgery was concerned the change was advantageous, for we had been enabled to further increase the equipment of the casualty clearing stations since Neuve Chapelle and to make them into real front line hospitals. The combatants

themselves looked to us for help, and no one actually at the battle front questioned any longer the policy of providing the wounded with prompt surgical treatment. The casualty clearing stations had indeed already won the confidence of the army, and now they were bound to progress yet further.

1916.

The year 1916 opened very quietly. A Third Army had been formed in the Albert region, with Colonel Alexis Thomson as its consulting surgeon, and a Fourth Army was in process of creation. It was this increase of the army that brought about in April my appointment as "Advising consulting surgeon" at General Head Quarters, and I was given a sort of roving commission along the whole front, with the duty of advising in all surgical matters. I had already the rank of surgeon-general, and this was of very great assistance in my new post.

Preparations were beginning for our attack in the Somme region, and I accordingly spent a good deal of time in the area occupied by the Fourth Army, on whose front the fight was to take place. Here I enjoyed the fullest opportunity of hearing from the D.M.S., Surgeon-General O'Keeffe, the arrangements which were being made for the casualty clearing station work, and I now had also the advantage of discussing the surgical proposals at first hand.

The chief difficulty was that the railway communications were as yet quite insufficient for all the requirements of the army, and, as supplies and munitions had first claim, it was difficult to get sanction for as many casualty clearing stations as seemed to be necessary. But we were going into a very big fight and the wounded were certain to be very numerous, so the Director-General ultimately arranged for the provision of fourteen casualty clearing stations to hold not less than 1,000 men each (some of them could take nearly 2,000), and, in addition, we provided near Albert a very good advanced operating centre for abdominal cases, with about forty beds.

Further, and most important of all, we were able to increase all the surgical staffs before the battle began, and were also allowed to bring to our help the surgical specialists from other casualty clearing stations further north, arrangements which greatly assisted the work of Colonels T. Sinclair and Maynard Smith, who were associated with me as consultants for the Fourth and Fifth Armies, for it should be mentioned that soon after the fight began our Fifth Army came into being. During this battle I took up my own residence at a casualty clearing station near Albert, and took charge of certain areas as a consulting surgeon.

It was well we had made large provision in the casualty clearing stations, for on the first day there were 22,500 wounded, the next day there were 16,000; the next day there were 9,000. After that matters eased, yet the total number of casualties during the battle was over 300,000. It was fortunate also that during this fight we had in each casualty clearing station fourteen medical officers instead of six, and fifteen nurses instead of five, and as the result of the increased staffs, and in spite of the pressure of battle, I had the satisfaction of reporting to the Director-General that we had done 30,000 essential operations under anaesthetics at the front during a period of three and a half months. That brings us to the end of 1916, a year in which front line surgery made a very great advance and established itself on a sound footing.

1917.

Now we come to 1917. Great encouragement was given to us by the Director-General to increase the staffs of casualty clearing stations materially, but, in consequence of the German army retiring over a large portion of the front, arrangements had to be made in addition for an advanced operating centre behind Arras. The scene of battle had now shifted northwards to the areas of the Third and First Armies, whose consultants were Colonels H. M. W. Gray and Cuthbert Wallace, and whose Directors of Medical Services were Surgeon-Generals Murray Irwin and W. Pike (the latter was shortly succeeded by Sir H. Thompson). The surgery had already become everywhere very much more efficient than it had ever been before, and "resuscitation wards" and arrangements for warming badly shocked men were to be found in every casualty clearing station. The Thomas splint, which formed such an important feature in our work, was now being universally used by the casualty clearing stations and field ambulances of every army, and it had even gone as far forward as the regimental aid posts in some areas. The best methods of applying it had been thoroughly taught during the winter by all the consulting surgeons, and its use and the use of other new first-aid splints had been demonstrated in every field ambulance as well as in the casualty clearing stations on the whole front. This personal education very soon proved of the greatest value.

The battle at Vimy and Arras, which began on April 9th, was fought by our First and Third Armies, and many new casualty clearing stations were provided before it began. It had to be unduly prolonged in order to help the French, who had got into great difficulties on the Aisne, and our prolonged attacking under very unfavourable conditions gave rise to many more casualties than would have occurred if we had only required to do as much as we ourselves wished. But the surgeons of the casualty clearing stations were reinforced by "surgical teams" from other units, comprising a surgeon, a sister, and an anaesthetist, and good work was done everywhere.

Then came the "Messines" fight, on June 7th, further north still, and when I returned to the Second Army I was glad to find that Colonel Gordon Watson was the consulting surgeon, and we arranged, under Major-General Porter, the D.M.S., for the treatment of the wounded. Well, that was a most completely successful fight. The arrangements of the D.M.S. for bringing the wounded into the corps dressing stations and the casualty clearing stations worked most smoothly, and 18,000 men were treated very thoroughly in three days. Most of the casualty clearing stations held as many as 1,000 patients, and had fifteen nursing sisters. In no previous fight had the wounded done so well.

Arrangements had then to be made with the Directors of Medical Services of the Second and Fifth Armies (Surgeon-Generals Porter and Skinner) for the "Third battle of Ypres"—the "Passchendaele fight"—which began on July 31st, and we were very fortunate in being able to provide for yet larger reinforcements of surgeons than formerly. There had recently arrived a number of American surgeons, and some of them were amongst the very best surgeons in the whole of America. They were not yet required for their own army, and by getting them and a number of our own colonial surgeons—Australians, Canadians, New Zealanders, and South Africans—we created enlarged and most efficient staffs for the casualty clearing stations, so that each of these had at least twenty-four medical officers, and we were also enabled to double the operating equipment. Each casualty clearing station kept eight operating tables at work, and no fewer than 60,000 wounded were treated under anaesthetics during the fight. That was the best thing that we had yet done, because, as the total wounded in the three and a half months amounted to 196,000, those 60,000 represented about 30 per cent. of the whole of the wounded who passed through the casualty clearing stations. It should also be noted that it was during this fight that blood transfusion was first employed on a large scale. Almost the whole of the necessary operations were done at the front on this occasion, and the result was that never before had the wounded in the general hospitals at the base done so well.

Before this battle had well finished another attack of ours blazed up at Cambrai on November 20th. The Germans replied by an attack on November 30th, and our casualty clearing stations, although they were very near the line of fire at one time, managed to hold on to their sites, and practically all the wounded were adequately treated.

The year 1917 came to an end soon after this battle, and the Army Medical Service could look back on its front line work with a good deal of satisfaction. The wounded had reached a total of nearly 500,000 in the year, but, in spite of such great numbers, a far larger proportion of them than in any previous year had been thoroughly treated at the front. The equipment of the casualty clearing stations had become very complete, methods of treating patients suffering from shock or loss of blood had been systematized, and the arrangements for reinforcing hard-worked units had been fully tried and not found wanting.

1918.

We entered next upon what proved to be the last year of the war—1918. It began very peaceably; there was nothing doing. I wandered over the front to see that all was in readiness, and found but few wounded anywhere, although we all knew that this was really the calm before the storm. There was subsequently a lot of talk about our being surprised by the German attack, but there was not a word of truth in this statement, for commanders of all casualty clearing stations in the Fifth Army had been warned by the D.M.S.—Surgeon-General Skinner—that the attack was impending, and later we got definite information that it would take place on March 21st.

On the morning of that day I started early, and from twenty-five miles away I could hear the roar of battle. I went down to the head quarters of the Fifth Army, and even after eleven o'clock there was so dense a mist on the hills that one could not see 100 yards. It was in that mist that at dawn the Germans had managed to push their way between our outposts where our line was very thin, for the Fifth Army covered about forty miles of line with only fourteen divisions. I got down to head quarters of the D.M.S. at Nesle, and afterwards went on further forward with the consulting surgeon, Colonel Maynard Smith, to a place called Ham. There I found the most advanced of our casualty clearing stations working splendidly, but there had been a fire in the medical stores in the village, and the railway line between this casualty clearing station and the next one at Cugny was broken by shell fire. We heard, however, that the patients had been got away to Compiègne, so I went on to a group of casualty clearing stations further north. Here also everyone was working hard, for they were close to the main road leading from St. Quentin, and great numbers of wounded were arriving. On this day, and early on the next, practically all the wounded were satisfactorily treated in the casualty clearing stations. Afterwards there were many who could not be brought in because, for one reason, the roads got so blocked with traffic, retiring guns, and innumerable lorries, that the ambulance cars which took patients to the casualty clearing stations from the field ambulances could not always get back to the field ambulances to pick up the next load. The result was that a certain number of wounded were necessarily left behind, although not before many of them had been carefully dressed and splinted by the field ambulance staffs. Some units lost their all, but others saved a great deal of their kit and equipment. Every casualty clearing station of the Third and Fifth Armies had to retire, but many of them were reconstituted in the neighbourhood of Doullens and Amiens, and within a day or two were again at work. The Third Canadian Stationary Hospital at Doullens was also reinforced by additional surgeons and acted as an enlarged casualty clearing station; it did excellent work for many weeks until it was destroyed by a fire started by a hostile bomb.

The Germans claimed 93,000 unwounded prisoners, but the actual number was, I believe, about 46,000 wounded and unwounded put together, and not a single patient once in a casualty clearing station was captured. Wonderful stories went round the base, and even to England, as to the number of people who had been captured, and one rumour said, "the whole of No. 00 Casualty Clearing Station has been captured with all the staff and the nurses," etc. It was all invention, yet, considering what had happened, it was surprising that there were not more reports of disasters. But then there was a complete absence of anything like a panic. In only one instance were a few patients left behind, and then they were left in charge of a medical officer and some orderlies. It was the right thing to do at the time, for the capture of the whole staff would not have helped matters. But even in that case some cars and lorries were sent back and everyone was evacuated before the Germans arrived.

Meantime, the train service to the base had been first-rate, and the general hospitals received the wounded with little delay. Fortunately, we had anticipated that the base hospitals would be heavily worked, and more operating theatres and more surgeons were waiting in readiness before the call for action came. The Directors of Medical Services and the consulting surgeons of the Third and Fifth Armies, Colonels Gray and Maynard Smith, had had a very anxious time, but the worst of the pressure was all over within a week, for by March 28th the retreat had stopped and the German attack had already failed.

The real cause of the failure was the complete defeat of the German assault on the Arras sector on March 28th. After having rushed the south of our line they made a very determined effort to get through further north, at the junction of the First and Third Armies, but there was no mist as there was on March 21st, and our artillerymen were able to get on to their troops where they were massing behind the line, and machine gunners and rifles fired into them as they came nearer. We heard afterwards, what we did not know at the time, that after the attack had failed with tremendous losses Ludendorff abandoned the main offensive, and you will remember that the further German advance towards Amiens never came off.

Fighting continued, however, in April and May in the northern part of the line which we called the "Kemmel area," and also on the Armentières-Bethune front in the Lys valley; but, although some of the casualty clearing stations had to retire, the front line surgery continued without much interruption in all three armies, and, while the people in England were still full of anxiety, we in France were confident that before the summer was out our turn to advance would come.

You will remember that on May 27th the Germans attacked the French on the Aisne. We also had some divisions down there, divisions which were not up to strength and which suffered very severely, although they held on, and by holding on they helped to prevent Rheims from being taken. But the French were defeated and were driven back beyond the Aisne, and in consequence one of our casualty clearing stations in this region was captured; as the staff remained to take charge of the wounded they were captured also.

We now come to July, the month in which the tide of battle began to turn, although the full flood did not run till August. On July 4th—Independence Day—the Americans came into the battle line for the first time at Villers Bretonneux. They had been ordered by their own people to be under our command for the attack, and then at the last moment for some reason the order for them to join in the attack was countermanded. This caused great disappointment, and one section of the Americans behaved as Nelson did when he put his blind eye to the telescope, and "did not hear the counter-orders." The attack was very successful; there were not many wounded, and all were easily dealt with by our surgeons.

On July 15th came the last attack of the Germans. They crossed the Marne, but were violently counter-attacked by French, British, and Americans on July 18th, and at that time and subsequently some of our casualty clearing stations had very heavy work near the Marne, and were so overfilled with wounded that many of the latter had to be passed on to American and French units for treatment.

It was early in August that I became aware of movements of large numbers of cavalry and guns, all very mysteriously done at night, and I realized that there was something big on foot. But it was only twenty-four hours before it actually took place that I and Colonel Gask, the consulting surgeon of the Fourth Army, were told officially that there was to be a big attack by us in the area of the Fourth Army on August 8th.

The warning was short, but the casualty clearing stations were ready in every way and ample reinforcements of surgical teams arrived in plenty of time, so that when the battle did begin, on the morning of August 8th, we were quite prepared for it, with plenty of casualty clearing stations and plenty of surgeons.

The attack of August 8th was a complete surprise, as you may remember. It was a surprise to you over here; it was a surprise even to some of the troops who took part in it, and it was a very great surprise to the Germans. That day marked the beginning of our own great offensive, the opening of the greatest battle that has ever been fought, and the beginning of a British advance which ran the Germans to a standstill, and which practically never stopped until the enemy were completely defeated and the Armistice was signed.

During the earlier part of the battle the fighting was mostly in the south, but after a short time it spread over the whole line. There was a brief interval after the end

of August, and then late in September we got back once more to the old position of the Hindenburg Line. When we got as far as that inquiries were set on foot to ascertain whether our troops were overtired, now that they had fought continuously for six weeks, but all the information pointed to the fact they were still full of go and keen to attack, so Sir Douglas Haig decided to press home the advance and to attack at all points.

The consequence was that on September 27th, 28th, and 29th our great assault took place on the Hindenburg Line, and in the north the Belgians joined in with the Second Army. On September 27th and 28th the Second, Third, and First Armies attacked, and finally, on the 29th, the Fourth Army. The result was a universal advance, heavy losses, but a complete destruction of the German morale, for now that they were driven back from what they had believed to be an impregnable position the fighting spirit was knocked out of them, although the First, Third, and Fourth Armies had some strenuous opposition in very difficult country early in October.

I need hardly remind you that these advances of ours always meant a constant moving and re-pitching of our casualty clearing stations, which had now to leave their huts, and some of their equipment behind them, and do their work in tents. But before each fresh advance there was generally a little breathing time, and, as everything was planned and thought out beforehand by the various Directors of Medical Services and their consulting surgeons, the casualty clearing stations were generally all well placed and well equipped before the fighting of the next stage began. What we did need very badly was more transport, and there can be no doubt that if front line surgery is to be maintained as it should be in an advance then the casualty clearing stations of the future must have far more transport allotted to them than they have had hitherto. We had great difficulties for want of it. During the earlier part of our advance the stress of the work fell successively on the Fourth, Third, and First Armies, and then on the Second Army. The Fifth Army had not been in the line since the great German attack, and was only just being reinstated when our own attack opened on August 8th. It came into action in September.

As far as the surgery was concerned, there was increasing difficulty in supplying sufficient staffs as more and more of the whole army became engaged, but almost everywhere the high standard which had been reached was maintained in spite of the difficulties.

A greater trouble was that the casualty clearing stations had often to send some patients to the base before operation or else to evacuate others sooner than was surgically advisable because of the constantly recurring calls to pack up and move on with the victorious troops. It was a penalty of success, and this evacuation to the base was really urgently necessary because the devastated country and the destroyed railways quite prevented the moving forward of the general hospitals.

The "Great War" was now drawing to a close, but it was destined not to end until we had crowned our success by an advance in the old "Ypres salient," and here on October 14th the Second Army fought for the last time over the old battlefield. The D.M.S., Major-General Guise Moores, pushed up our clearing stations in preparation for this fight, now not only as far as they had been before the previous March retreat, but this time as far as Ypres itself, and we established a group of three at Brielen, just outside Ypres.

I told you that I originally arrived at the Ypres front on October 13th, 1914, and here we were back again on October 14th, 1918, after an interval of just four years. I had heard the first shells come into Ypres, and that day I heard the last. It was interesting to realize that, whereas in 1914 there was no attempt to perform surgical operations at the front on a large scale, in 1918 no less than 40 per cent. of the whole of the patients who were brought to the Brielen casualty clearing stations of the Second Army were anaesthetized and passed through the operating theatres during heavy fighting.

Extraordinary changes had taken place in the treatment of wounded men between the "First battle of Ypres" in 1914 and the "Last battle of Ypres" in 1918.

You will remember that when Napoleon returned from Elba there was the campaign called "The Hundred Days." The great battle that the British army began on August 8th and finished on November 11th, and which resulted in the defeat of the Germans and the ending of the war in 1918, instead of continuing through the winter, lasted just about the same time. It will very likely be known in future as "The Hundred Days Battle of the Great War."

During this period we had more than 300,000 wounded to deal with, but the accumulated experience of many battles and the systematized methods developed by constant practice enabled the work to be done with comparatively little difficulty. It is, of course, true that at times the casualty clearing stations were overworked and that the quality of the surgery suffered. This must always occur in great battles because of events beyond the control of the medical service. Yet, even when this is admitted, it may still be claimed that the British surgery of the front showed a continuous improvement in each successive year of the Great War.

ON ABDOMINO-THORACIC WOUNDS OF WARFARE.

BY

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THE first abdomino-thoracic gunshot wound which I ever saw and the first operation for this injury which I witnessed was in 1910 or 1911 in the Middlesex Hospital; an urgent thoraco-laparotomy was performed by my colleague and chief, Sir John Bland-Sutton, and a successful result was obtained in his skilful hands. The case was that of a footman of seventeen years, who shot himself in the chest with a revolver, "because the girl he loved did not requite his love." The wound of entry was in the fifth left intercostal space, half an inch below the left nipple; the patient's condition was desperate and the thorax was hastily opened by a vertical incision dividing the lower costal cartilages, and the abdomen was subsequently opened in the left linea semilunaris by a prolongation downwards of the thoracic incision. The missile was found to have traversed the lung, diaphragm, stomach, and spleen, and it was removed from beneath the skin in the left lumbar region. The pleura was swabbed dry of blood, and many ounces of blood were sponged from the coelom. Wounds of the anterior and of the posterior wall of the stomach were sutured, and the spleen, which was bleeding freely, was removed. The chest and abdomen were closed and the diaphragm sutured. An intravenous saline was given during the operation and the patient rallied thereafter. An empyema, due to infection with a coliform organism, retarded his recovery, but the patient ultimately got well. The sequel is interesting, for "the girl, finding the youth so ready to sacrifice himself for unrequited love, softened her heart; the pair are contented with each other now, although the accident went near to swelling the list of love stories with tragic endings." [1]

This incision of Sir John Bland-Sutton for dealing with an abdomino-thoracic wound is, then, the prototype of the thoraco-laparotomy reintroduced by Pierre Duval in 1917—some six years later.

The subject of abdomino-thoracic wounds was discussed by Sir Anthony Bowlby, Jules Voncken, and Pierre Duval at the third Allied Surgical Congress for the study of war wounds held at Val-de-Grâce in November, 1917. Sir Anthony Bowlby's contribution to the discussion has been incorporated in the *Manual of Injuries and Diseases of War*, which was issued by the War Office in 1918. It would be idle to reiterate the information and opinions expressed therein; they are familiar to all the surgeons who have worked in the forward area. It is worthy of note that this class of wound constitutes about 9 per cent. of the thoracic wounds admitted into a casualty clearing station, and, according to Sir Cuthbert Wallace, about 12 per cent. of the abdominal cases. Jules Voncken's estimate of their frequency is, however, somewhat higher.

Some of the earlier papers specially point out the severity of this type of lesion. Walters, Rollinson, Jordan and Banks,[2] writing on February 10th, 1917, note especially the high mortality. Only 18.5 per cent. of such patients in their series of cases recovered, and they state that in those who survived only solid viscera were injured.

Major A. L. Lockwood, D.S.O., and his co-workers at No. 36 Casualty Clearing Station,[3] as a result of their experiences in the Somme offensive of 1916, took a more hopeful view, and in March, 1917, pointed out that wounds of the diaphragm are by no means necessarily fatal, nor even to be greatly feared, if particular attention be given to repairing the diaphragm at the earliest possible moment. Lockwood's attention was especially focussed on this muscle, and the improved results in this class of case in his hands were undoubtedly due to the suture of this muscular barrier between chest and belly. The dogmatic statement, however, that death certainly ensues if something be not done to repair the diaphragm in every case of injury to that muscle, is open to question. On more than one occasion, especially on the right side, the diaphragm has been deliberately left unsutured, and a favourable issue has ensued. Increasing attention to the thoracic aspect of the abdomino-thoracic wound has led to still greater improvement in the results.

It must be remembered that it was not until the later part of 1916 that the general principles underlying the treatment of gunshot wounds in general were applied to injuries of the thorax. It is now generally accepted that the sooner a wound is rid of the agents carrying infection—for example, foreign bodies and clothing—and the sooner the media suitable for the growth of organisms are removed—for example, blood clot and devitalized and damaged tissue—the better is the prognosis. In no class of case was this axiom so neglected as in the case of gunshot wounds of the chest. Although Sir Henry Gray and Captain J. E. H. Roberts[4] operated upon a chest case in Rouen early in 1916, and Major Jack Anderson, D.S.O., operated upon several chests in the early summer of 1916, yet it is to Pierre Duval, of the French army, and to Colonel Gask, C.M.G., D.S.O., that the credit is due of evolving a technique in dealing with wounds of the thorax.

During 1917 the attention of surgeons was increasingly directed upon thoracic surgery, and papers were published in the autumn of 1917 and early winter of 1917–18 by Gask and Wilkinson,[5] Jack Anderson,[6] Roberts and Craig,[7] and Lockwood and Nixon,[8] which embodied the experience derived from casualty clearing station work during the year.

Statistics all go to show that the *immediate* prognosis of an abdomino-thoracic wound is in many cases largely determined by the nature of the *abdominal injury*. Those that are accompanied by a wound of a hollow viscus are very fatal. Thus Sir Cuthbert Wallace found that only 7 out of 28 such cases were evacuated to the base—that is, the mortality amounted to 75 per cent. Gask and Wilkinson[5] saved only 3 out of 13 cases with hollow viscus injury, and another series showed only 1 recovery in 5. Lockwood,[8] however, managed to save 8 out of 20, and I have records of 11 recoveries of my own out of 22 cases, a recovery rate of 50 per cent. Nevertheless, when a comparison is instituted with cases associated with solid visceral injury, the mortality is relatively high.

My own personal series of 75 abdomino-thoracic cases submitted to operation, or at least transfused with blood with a view to operation, represents practically every abdomino-thoracic case admitted to my casualty clearing station from the end of the Cambrai "show" in 1917 till August, 1918. It also includes several cases operated upon in the beginning of the autumn advance of 1918. The recovery rate, therefore, is not merely the recovery rate of cases submitted to operation, but is really the recovery rate of those cases admitted to hospital in which it was considered that operation was urgently needed if life was to be saved. The cases complicated by hollow visceral injury gave a recovery rate of 50 per cent. Those complicated by wounds of a solid viscus showed a recovery rate of 70 per cent. The total recovery rate in my series is 64 per cent. In 22 of these cases transfusion was considered necessary and performed, and 11 of these recovered. Nine of the 22 transfusions were hollow viscus injuries, and 5 lived.

An analysis of the 27 cases that ended fatally shows that 2 died before any operation could be performed, 13 in less than twelve hours, and one in eighteen hours, presumably from the abdominal injury. The remaining 11 all died of some form of chest complication—massive collapse, pneumonia, thoracic sepsis; one died of a subphrenic abscess.

The remarkable statistics of Saint and Jack Anderson are worthy of notice (*vide infra*). Saint's recovery rate in 22 cases is over 80 per cent.; in only two cases, however, of this series was there injury of any hollow viscus, but some of the cases which recovered were complicated by very severe wounds of other parts. Major Jack Anderson, D.S.O., has a remarkable recovery rate of 79.2. Forty-two out of 53 of his cases were evacuated to the base. In his series also the relative number of cases complicated by injury to the hollow viscera was small. None the less, both series of statistics constitute a triumph of surgery.

I have been able to collect 207 cases of abdomino-thoracic injury operated upon during the year 1918 either by myself or by some of my colleagues in the Fourth Army, who have courteously sent me their notes. As is shown in the accompanying table, 138 made a good recovery; the percentage of recoveries amounts to 66.6. When compared with Sir Anthony Bowlby's figures given at the Surgical Congress at Val-de-Grâce in November, 1917, these statistics show a remarkable improvement. Sir Anthony published notes of 151 cases, with 74 recoveries—recovery rate 49 per cent. Sir Cuthbert Wallace, in his *War Surgery of the Abdomen*, published in the summer of 1918, gives 70 cases, with 31 recoveries—percentage recovery 44.3.

Some Abdomino-Thoracic Injuries Operated on in the Fourth Army during 1918.

Surgeon.	Cases.	Recoveries.	Percentage of Recoveries.
Saint	22	18	81.8
Jack Anderson	53	42	79.2
Hancock	12	8	66.6
Gordon Taylor	75	48	64.0
Stanley	24	14	58.3
Walker	21	8	38.1
Total	207	138	66.6
Sir Anthony Bowlby, November, 1917	151	74	49.0
Sir Cuthbert Wallace, 1918 ...	70	31	44.3

Perhaps some allowance may be made for a surgeon's vanity over not only his own but also his colleagues' successful cases, and licence may be granted me to quote several cases of severe abdomino-thoracic injury saved by surgery; the desperate nature of this type of wound may not be fully realized by those who are not personally acquainted with the work in the casualty clearing zone.

Major Lockwood, D.S.O., of No. 36 Casualty Clearing Station, records the following case:

CASE I.

Gunner C., aged 31; penetrating chest wound; haemothorax; laceration of diaphragm, liver, and right kidney, with hernia of colon.

On arrival at the casualty clearing station on September 27th, 1917, he was moribund. Active resuscitation; heated bed, sleep (omnopon), intravenous sodium bicarbonate 2 per cent. 20 oz. Rallied very slowly. Blood transfusion 600 c.cm. with Kimptom-Browne tube.

Operation six hours after admission; prepared and taken to theatre directly after blood transfusion, condition being much improved. Pulse rate 130 to 140; blood pressure 85; respirations rapid. Large entrance wound admitted three fingers (not a sucking wound) just to the right of body of third lumbar vertebra. Dirty jagged exit wound admitting three fingers over the costal cartilage of the ninth right rib in the anterior axillary line. Hernia of colon through exit wound, gangrenous patch size of one franc piece with half-inch laceration. Anaesthesia, paravertebral and local. Incision from side of third lumbar vertebra to cartilage of ninth rib. Excision *en masse* of entry and exit wounds with deep muscles of back. Gangrenous patch in the bowel excised, and closed with linen thread. Colon replaced in peritoneum. Chest entirely full of clotted blood. A widely open laceration of diaphragm five inches long and a quarter to half an inch from its parietal attachment. Lung almost completely collapsed. Pleura cleansed. Diaphragm sutured with catgut. Laceration of outer and lower border of liver admitting three fingers, but liver not bleeding. Peritoneum swabbed dry and closed. Right kidney split across beyond repair. Nephrectomy. Operation entirely carried out under paravertebral and local anaesthesia; no gas and oxygen used. Recovery uneventful; evacuation November 20th, 1917.

Major Charles, O.B.E., of No. 30 Casualty Clearing Station and of Ipswich, has sent me notes of another case.

CASE II.

Lieut.-Colonel P. of the Third Canadian Division, was admitted under his care for a shell wound of the left arm, and an abdomino-thoracic wound of the left side. The missile had entered over the eighth rib in the left nipple line. The patient was collapsed and pulseless on admission, and exhibited signs of severe internal haemorrhage. Resuscitation for two hours; abdomen explored by transdiaphragmatic route. Resection of 6 inches of rib; haemothorax evacuated; omentum found protruding through diaphragm. Spleen hopelessly shattered; splenectomy; wound of stomach sutured; diaphragm sutured, and thorax closed. Pulse at end of operation 150. Transfusion of blood 2 pints. Twelve hours later the pulse was 100 and of good volume. The officer made thereafter an uneventful recovery, and was discharged fit for duty three months later.

Major Saint's case of an abdomino-thoracic wound with penetration of chest, diaphragm, and liver, and wounds of the duodenum and colon by a large piece of shell, is well worthy of mention, particularly when we reflect upon the high mortality associated with wounds of the first portion of the small bowel.

It would be possible to multiply almost indefinitely the records of desperate abdomino-thoracic cases which have survived by reason of surgery; such cases have, I suppose, been sent down by the surgeons of almost every casualty clearing station on the British front. Some cases of my own have been a source of satisfaction to me.

CASE III.

Pte. S. M., of the A.I.F., was hit about midnight near a ration dump by a large piece of air bomb. He was admitted into the casualty clearing station some hours later in a moribund condition. Active resuscitation was started, but his state remained desperate, and twelve hours later he was taken to the operating theatre in a pulseless condition. Blood transfusion 800 c.cm.; wound of entry in lower part of left chest widely excised, and haemothorax evacuated; several feet of small intestine in pleural cavity, spleen almost completely divided into four pieces; splenectomy; wound of diaphragm enlarged, edges excised; small intestine returned into coelom; diaphragm sutured, chest closed. The patient developed pneumonia in the lower lobe of the right lung, but made a good recovery and returned to Australia.

CASE IV.

Sapper McG. was admitted into a casualty clearing station in a pulseless and apparently moribund condition one evening in July, 1918. So desperate was his condition that the reception room officer informed me that he thought he would be dead before I could reach the hospital from the officers' mess. Active resuscitation was, however, practised, and he was taken to the theatre three-quarters of an hour later; he was found to have an enormous tangential wound of the lower portion of the right chest. Four ribs were badly "stove in," an enormous rent in his liver was bleeding, and there was a hernia of the hepatic flexure of the colon and of the right kidney. Blood transfusion 800 c.cm. Damaged ribs resected; damaged portion of liver excised; kidney and colon washed and replaced; the diaphragm, which had been detached by the missile, was resutured to the upper edge of the opening in the pleura. The following day the left arm was amputated for a severe gunshot wound of the forearm with extensive damage to muscle and gas gangrene, which by this time had established itself. The patient, notwithstanding the severity of the injury, made a good recovery.

CASE V.

Sgt. G., of the A.I.F., was admitted to a casualty clearing station in the middle of July for a severe abdomino-thoracic wound of the left side. The diaphragm had been detached from its costal attachments for about five inches. The lower ribs were badly "stove in"; the left kidney was split irreparably, and covered with dirt and filth. The splenic flexure of the colon was shattered and gangrenous and was resected, an end-to-end junction was performed; the right kidney was hopelessly damaged and impregnated with dirt, and was removed. The diaphragm was reattached to the upper margin of the wound in the pleural cavity, and the abdominal cavity properly resutured and closed by a plastic operation.

The patient was brought to the operating theatre in a pulseless condition in spite of resuscitatory measures which had been practised for six hours since his arrival in the hospital. Blood transfusion was commenced at the same time that the operation started. For four days subsequent to his operation the patient did well; then an anaërobe infection of his chest declared itself. Thoracotomy was performed through a fresh incision, some clot evacuated, and the pleura washed with flavine and closed. In spite of blood transfusion and frequent aspiration the infection gained ground, and cultures of the fluid from the pleura showed the presence of almost every anaërobe prone to attack wounds of the chest. He died on the eighth day after the operation.

These examples are typical of the severe abdomino-thoracic case; the improved figures, then, are not due to the fact that the type of case that has come under the care of the surgeon has been less severe. The cases quoted above show that the benefits of surgery were extended by the casualty clearing station officers to even the most desperately wounded.

I am convinced that the *immediate mortality* of the most desperate cases has been reduced by blood transfusion, by nerve-blocking, and probably also by the more extensive employment of gas and oxygen. None the less, it is only fair to add that one has seen many desperate cases recover where chloroform and oxygen have been used.

The *late mortality* of the abdomino-thoracic wound has most certainly been reduced by the improved technique of thoracic surgery.

Two cases of a special interest have reached casualty clearing stations as the result *of accidents to kite balloons* on the British front.

CASE VI.

Two Hun aeroplanes came out from behind a cloud and "sträfed" a kite balloon near Sorel. One plane selected as the object of its attack the balloon itself, the other made for the observing officers as they descended to the ground in parachutes. One escaped completely, the other sustained a severe abdomino-thoracic wound of the right side, involving chest, diaphragm, and liver. He made a good recovery.

CASE VII.

Sgt. S., of the Kite Balloon Section, was observing at about 2,000 feet. He was shot by a Hun airman through the right chest and abdomen. He came down in a parachute, and at the operation one-third of the right lobe of the liver was found to be completely detached and lying free in the abdomen. The liver and diaphragm was sutured; shock was very severe. The wound broke down badly on the tenth day; the intestines were in the bed, but were replaced; the wound was resutured, and the patient made a good recovery. I am indebted to Major Jack Anderson, D.S.O., for the notes of this case.

The following case is of interest:

CASE VIII.—*Abdomino-thoracic Injury Produced by a Bayonet.*

Lieut. B. was out on night patrol, and was bayoneted through the right hypochondrium. At operation the liver, diaphragm, and pleura were found to be penetrated. An empyema complicated his convalescence, but he was ultimately discharged fit.

CASE IX.—*A Case for Diagnosis.*

A soldier was standing by his horse in the transport lines near Templeux-Guerard and was suddenly seized with pain in the right side of the abdomen. He was admitted to the main dressing station and sent down by an able officer of a resuscitation team attached to a corps main dressing station as a case of "appendicitis." He was admitted to a casualty clearing station, where, after careful examination, several competent surgeons diagnosed a "perforated duodenal ulcer." To exclude the possibility of any thoracic disease with referred abdominal pain, a physician was invited to examine the chest. Apart from the fact that the breathing was weaker over the right lower lobe, no abnormal physical signs were observed.

The abdomen was opened. A few drachms of blood were found in the right kidney pouch; the duodenum was examined and a perforation was found in the first part. The diagnosis seemed only too truly confirmed. The opening was sutured and the abdomen closed. For some eighteen hours the patient did well, but suddenly failed and died.

I had the opportunity of being present at the autopsy. The sutured perforation was in good repair, but there was more blood in the peritoneal cavity than at the first operation. The duodenal suture was undone and a finger introduced into the lumen of the bowel, passed through another opening posteriorly, and impinged against a machine-gun bullet embedded in the head of the pancreas! Investigation of the source of the bleeding in the coelom revealed the fact that there was a through-and-through wound of the liver. Very careful search of the surface of the body disclosed a minute wound of entry in the supraspinous region of the right scapula. Although the bullet had passed downwards through the lung and diaphragm, only about a couple of ounces of blood were present in the right chest cavity; the diaphragmatic opening was minute.

It is interesting to add that this patient, on admission to the casualty clearing station, when describing the onset of his pain, made the remark that "it felt exactly as if he had been shot." The missile apparently came from an enemy aeroplane; it was an armour-piercing bullet. He was indeed a "battle casualty"!

Traumatic Diaphragmatic Hernia.

Out of 22 personal cases of abdomino-thoracic wounds of the left side, associated with injury of a hollow viscus, there was a hernia of the stomach in 4. In one case small bowel, and in one the colon, was herniated into the pleura, and in nearly every case there was a hernial protrusion of omentum. Increasing experience of hernia in left-sided abdomino-thoracic wounds made me the more inclined to approach the diaphragm from the thoracic side, even when the injury was due to a bullet.

CASE X.—*Traumatic Diaphragmatic Hernia of the Diaphragm, Fatal Seven Months after the Wound.*

Captain C. P. Symonds[9] has reported in detail the case of a private, aged 29, who was admitted to the Connaught Hospital, Aldershot, at the end of August, 1916, for severe abdominal pain. He was wounded in the preceding February when fighting against the Senussi.

Six weeks after the original wound he had his first attack of pain, which was, however, very slight. The attacks of pain became more frequent and more severe, but the attack which brought him for relief to the Connaught Hospital was the most severe that he had till then experienced. On radiography, after a bismuth meal, the bismuth was seen to extend in the stomach right up to the second left rib in front, and above it could be seen the dense compressed lung. He was therefore transferred as an urgent surgical case to the Cambridge Hospital, Aldershot, to be under surgical care. Here, however, his condition rapidly improved; the pain disappeared, and in a few days he was able to take food without discomfort. He came under my observation and that of my colleague, Major James Taylor, and considerable doubt was expressed as to the validity of the diagnosis. The *x*-ray experts at the Cambridge and at the Connaught were not in agreement in their findings nor in the interpretation thereof. The man seemed very well, and surgery did not appear to be urgently called for.

In the beginning of October the patient had another severe attack of pain, and in my absence an operation was performed by Major James Taylor. A hole in the diaphragm was found, but the man's condition was desperate, and he died of shock.

At the autopsy a large circular opening, admitting a medium-sized hand, with quite smooth and rounded edges, was found near the centre of the left dome of the diaphragm. In the thorax were the stomach, great omentum, transverse colon, upper half of small gut, the last kinked in several places, distended, and of a deep plum colour. The stomach reached as high as the second left rib and was partly adherent to the chest wall.

The expanded copper casing of a rifle bullet was discovered in one edge of the diaphragmatic wound, but no trace of the leaden core was found. Presumably the latter had been removed in the earlier operation performed in Africa.

It is remarkable that, considering the number of abdomino-thoracic wounds which must have been unoperated on in the early part of the war, so few cases of diaphragmatic hernia have been recorded. Perhaps Lockwood's contention that very few of these cases survive is true. D'Oyly Grange[10] has, however, recorded a case of diaphragmatic hernia which followed a bullet wound of the left chest. It was successfully operated on in Newcastle by the abdominal route.

P. Lecène[11] has recorded two cases of traumatic diaphragmatic hernia of the stomach which became strangled, and in one case underwent torsion as well. These cases were operated upon from the abdomen; in one the cartilagino-osseous thoracic outlet was temporarily detached; in the other the eighth costal cartilage had been removed at a previous operation, and ready access was thereby afforded to the region of the hernia. I have knowledge of two more cases of diaphragmatic hernia, each consequent upon a bullet wound, which became strangled. One was successfully operated upon; the other proved fatal.

Experience has persuaded me that the thoracic route is the right method of approach for dealing with a diaphragmatic hernia. The Germans have painted too gloomy a picture of the dangers of an artificial pneumothorax, and have made too much of their negative-pressure chambers and positive-pressure anaesthetic arrangements.

In the treatment of abdomino-thoracic injuries, just as in that of wounds of most regions of the body, the successive years of the war have witnessed a steady progress; more and more abundant have become the triumphs that surgery has won. I am proud of the privilege I enjoyed of working for nearly two years in the casualty clearing zone, where these triumphs have been gained, and I am especially grateful to Major-General Sir Anthony Bowlby, K.C.B., through whose kindly offices I was enabled to share the labours of those who gladly and cheerfully toiled at "the back of the front."

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THE Belgian Surgical Society will celebrate the twenty-fifth anniversary of its foundation in September next at Brussels.

ACUTE DIVERTICULITIS OF THE TRANSVERSE COLON: RESECTION OF BOWEL: RECOVERY.

BY H. F. VELLACOTT, F.R.C.S.,
PLYMOUTH.

MRS. W., aged 36, was admitted to the Royal Albert Hospital, Plymouth, on December 28th, 1918.

History.

She had been subject to attacks of pain in the upper abdomen for about eighteen months. This pain was severe at times, but had no relation to food though she had to be careful what she ate. On the day of admission she had "had indigestion all day," which developed into acute pain quite suddenly about 5 p.m. Dr. Pullen, of Stoke, was called at 10 p.m., and immediately sent her to hospital where I saw her at 11 p.m.

Vomiting and the signs of acute appendicitis were all present with the exception that the maximum tenderness and rigidity were situated to the right of and close to the umbilicus. This was noted, but I made the diagnosis of appendicitis without hesitation.

The general condition was excellent, the pulse being 84 and the temperature 99.8° F.

Operation.

A right rectus incision was made. There was considerable excess of free fluid present in the abdomen with a faint smell of *B. coli*. The appendix was easily found, and seen to have been the seat of former disease, but was obviously not the cause of the present attack. It was rapidly removed. By introducing the finger I could now feel a mass higher up in the abdomen, and therefore enlarged the incision. Adherent to the transverse colon lying in relation to the second part of the duodenum was a small amount of "lymph" and a mass the size of a large walnut was felt in its upper and posterior wall. The omentum was wrapped round this. From the mass a thick band passed up in the transverse mesocolon towards the central group of lymph glands. This band and the mass in the bowel were so hard that I diagnosed malignant disease with perforation, and decided to resect. About six inches of the gut were accordingly resected, and an end-to-end union made. Great care was necessary in the resection, as the thickening in the mesentery involved the superior mesenteric vessels. The resected segment of gut was slit down and held out for my examination, and the true diagnosis became apparent. No other diverticula were seen on the exposed part of the bowel. It was noted that the gall bladder lay immediately above the area of resection, but was not involved in adhesions. Gall stones were felt, but it was not the time to remove them, so I closed the abdomen except for a rubber drainage tube.

The progress of the patient was uninterrupted, and I last saw her on June 12th, when she looked very well. She suffers from indigestion, which suggests that an operation may soon be necessary for removal of gall stones.

Description of Specimen.

On examining the part removed I could find no trace of malignant disease in the lumen of the gut, but on the upper posterior wall was a small opening, an eighth of an inch wide, leading to a cavity in the hard mass. This cavity was a little more than a quarter of an inch in diameter, and was neatly filled by a concretion which could be seen from the lumen of the gut. A perforation had taken place from the diverticulum forwards into the general peritoneal cavity in front of the transverse mesocolon. Microscopical sections showed no trace of malignancy. The concretion was composed of inspissated faeces.

The case is of interest as occurring in the transverse colon and at the early age of 36. Apparently it is not the first time that the inflamed and cicatricial mass has been mistaken for a growth in these cases. For the original diagnosis of appendicitis I make no apology.

THE INGUINAL ROUTE FOR RADICAL CURE OF OBTURATOR HERNIA.

BY
TEMP. MAJOR E. T. C. MILLIGAN, R.A.M.C.

ATTENTION has recently again been focussed on the inguinal approach in the operation for radical cure of femoral hernia. Above many other advantages, it ensures the obliteration of the sac. The suitability of the same approach for the radical cure of obturator hernia is worthy of note. The class of case to which it might be applied is represented by a patient who came under my observation recently.

He complained of dull pain over the inner portion of Scarpa's triangle in the right thigh, with indefinite tenderness over the inner and upper portion of the pectineus muscle; the symptoms,

he said, were aggravated many times during the day and once or twice at night while asleep, by any sudden turning of the leg outwards. His troubles were annoying rather than disabling.

He had been examined with great thoroughness and treated at several hospitals in an endeavour to diagnose his condition, which was suspected to be obturator hernia, but clinical methods had failed to bring about an accurate diagnosis, and his symptoms were unrelieved.

I decided that the obturator foramen should be explored, and adopted the following method of approach as causing the least disturbance to tissues and structures.

An oblique incision was made parallel to and just above the inner end of Poupart's ligament, exposing the external abdominal ring and the attachment of the external oblique aponeurosis to Poupart's ligament. The aponeurosis was incised in the line of the skin incision and the upper part retracted. The spermatic cord was also drawn upwards out of the way and the external iliac vein and the femoral ring defined. With deep retractors the peritoneum was pushed upwards from the pubic bone, when, about one inch behind the femoral ring, could be seen and felt the obturator foramen, through which the obturator nerve disappeared into the thigh after running along the wall of the true pelvis in a conspicuous manner.

The sac of the hernia was drawn from the foramen without difficulty and its obliteration was assured by this approach.

The above method is eminently suited for this class of case, but would not be recommended for strangulated obturator hernia, because it could not be diagnosed clinically with certainty as the origin of the mischief. Such an abdominal catastrophe would call for laparotomy in order to elucidate and treat the cause.

PERFORATED DUODENAL ULCER IN A MAN OF 83: OPERATION: RECOVERY.

BY

HERBERT H. BROWN, M.D., F.R.C.S.,

SURGEON TO THE EAST SUFFOLK HOSPITAL.

In each of the two successful cases of operation for perforated gastric ulcer recorded by Captain E. Huntley, R.A.M.C., in the JOURNAL of July 12th, the operation was performed within a few hours of the perforation, and he emphasizes the importance of operation at the earliest possible moment.

The following case was remarkable from the fact that the perforation occurred when the patient was more than 80 years of age, and I attribute the successful result mainly to the fact that I was able to see him soon after the occurrence, and operate within a few hours.

He was a fairly healthy old man and active for his years. On June 30th he was suddenly seized with very severe pain in the upper part of the abdomen, and vomited almost immediately, bringing up nearly two pints of fluid material. When I saw him, about 6 p.m., he was suffering great pain; the abdomen was very rigid but not much distended, and the liver dullness had not disappeared. I gave morphine gr. ¼ and arranged for his transfer to a nursing home.

On opening the abdomen at 9 p.m. only a few bubbles of gas escaped; there was a moderate amount of greenish fluid in the upper part of the abdomen, but no peritonitis. There was no fluid in the pouch of Douglas. A perforation was immediately evident on the anterior surface of the duodenum close to the pylorus. The edges were indurated, and apparently the ulcer was of some duration. It was closed with two layers of sutures, and posterior gastro-jejunostomy performed. A pint of food was introduced into the jejunum before the first row of sutures was completed. A drainage tube was left in the wound, extending to the site of the ulcer, but no other drainage seemed necessary. The tube was removed after forty-eight hours, and the patient made an uninterrupted recovery. I started feeding him with peptonized milk within twenty-four hours of the operation.

Captain Huntley mentions that in neither of his cases was irrigation of the abdomen performed, and expresses the opinion that in early cases irrigation may possibly do more harm than good. I would go much further than this. I believe that in no case, early or late, should the abdomen be irrigated, and that this applies to all forms of septic peritonitis.

In the early days of operation for perforations irrigation was the rule, but since it has become the general custom to mop out the superfluous fluid, drain the pouch of Douglas, and sit the patient up in the Fowler position, the prognosis has become far more favourable. This has been attributed to the shock, so called, of flushing the abdomen, to the diffusion of the septic material, etc.; but flushing the abdomen does not in itself cause any perceptible shock. In cases of ruptured pregnant tubes the abdomen, which is full of blood, may be flushed out with large quantities of normal saline solution with only beneficial results.

I think the explanation is simple. With the onset of peritonitis an inflammatory reaction in the serous membrane is set up, the vessels are engorged, serum is poured out in quantities into the peritoneal cavity highly charged with leucocytes, which attack the deleterious organisms, and the result of the combat is the lymph and purulent fluid which are so evident. The osmotic current is from the circulation to the peritoneal cavity, and only to a moderate extent are toxins absorbed back into the circulation. But when we replace this fluid with normal saline we leave in the abdomen a large quantity of fluid highly charged with toxins which it has dissolved, and this fluid is rapidly absorbed into the circulation, carrying the toxins with it.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ENLARGEMENT OF ADRENAL IN STARVATION.

WHILE working as a prisoner of war behind the German lines in a prisoners' hospital laager it fell to my lot to carry out several autopsies on British and allied soldiers who died in the laager. Many batches of prisoners arrived from neighbouring working parties, where they had been systematically underfed, and had been worked until they were physically prostrated. From each batch some members died a very short time after admission. I was greatly impressed, in carrying out autopsies on these emaciated cases, by the size of the adrenal glands. In a series of eight cases of death from underfeeding the adrenals were definitely enlarged, almost to half as large again as normal, and the enlargement seemed, from naked-eye appearance, to be mostly in the cortex. Unfortunately there were no facilities for microscopy.

It would appear that the adrenals had hypertrophied to counteract the low blood pressure produced through insufficient nourishment. Perhaps this observation may lead others who have occasion to examine *post mortem* cases of extreme emaciation to pay special attention to the adrenal glands.

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Queen Alexandra Military Hospital,
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IODINE IN VARICELLA.

ONE of the worst effects of chicken-pox is the scarring, particularly on the face. These scars are invariably caused by the pocks becoming secondarily infected; irritation is set up, and the patient cannot refrain from scratching, with the result that a permanent scar is formed, and the course of the disease greatly prolonged.

For some time past I have made it a rule to treat all these cases with iodine. From the first I give instructions that every vesicle shall be painted twice, or at least once, a day with tincture of iodine, applied with a small camel-hair brush. The result fully justifies the slight trouble involved, for not only is secondary infection prevented, but (perhaps in consequence) the itching, which in some cases is so intolerable, is almost entirely prevented; the pocks heal more quickly; the duration of the disease, and so the infectious period, is materially shortened; and scarring is entirely absent if the treatment is conscientiously carried out.

I always advise that not more skin than possible be painted, only the vesicles themselves; I have not seen irritation set up even in cases with a large number of pocks.

Cheam, Surrey. CHARLES CORBEN, M.D., F.R.C.S.E.

COLLOSOL MANGANESE IN ANAEMIA.

FOR the last two years I have been using injections of collosol manganese (1.0 c.cm.) in cases of anaemia in which the patient had a definite intolerance of iron. The results have been exceedingly good and the improvement in the women's general health marked. In several of the cases I commenced the manganese treatment for the relief of boils from which the patient suffered, and found that as

the boils or pustular eruptions disappeared the anaemia rapidly improved. I have tried it also in other cases in which a great tendency to constipation contraindicated the use of iron, and in these instances the results were equally good.

London, W. E. B. TURNER, F.R.C.S.

RUPTURE OF OVARIAN CYST DURING PREGNANCY: OVARIOTOMY: PREGNANCY NOT INTERFERED WITH.

ON March 3rd, 1919, I was called to see, in consultation with Dr. McArthur, of Gardenstown, Mrs. T., aged 39, an 8-para.

She had had amenorrhoea for eight months and considered herself pregnant, but during the whole of the pregnancy she had been much bigger than in her previous pregnancies. About eight weeks before I saw her she had been seized with acute pain in the right side, after which the abdomen had rapidly become more distended. It was now so distended that she could not walk about and had been lying in bed for over a week.

Examination of the abdomen revealed free fluid, but nothing more could be made out. The heart seemed to be quite normal and she was passing a normal quantity of urine which was free from albumin.

I decided to tap the abdomen to relieve the extreme distension, and withdrew 16 gallons of fluid which had all the appearances of ovarian cyst fluid. The uterus could now be felt lying well to the left side of the abdomen and apparently about the size of an eight months' pregnancy. Occupying the whole of the right half of the abdomen was a cystic swelling which could not be displaced.

A week later she was removed to hospital, and I operated on her on March 13th through a right pararectal incision. The tumour was a large multilocular cyst of the left ovary, the pedicle being twisted and lying compressed between the uterus and the promontory of the sacrum; a rent was discovered in its outer wall where it had evidently ruptured. The cyst and contents remaining after removal weighed 17 lb.

The patient made an absolutely uneventful recovery, in spite of the fact that the news of her husband's death had to be broken to her on the sixth day. On April 18th she was delivered naturally of a full-time living child after a short labour of three or four hours. The child weighed 7¾ lb.

I have reported this because of the following features: (1) The rapid growth of the cyst during pregnancy; the abdomen had not been noticeably big prior to this pregnancy. (2) The spontaneous rupture, which is comparatively rare; M'Kerron found it to occur in only 2.3 per cent. of the cases which he collected. (3) The enormous size of the cyst and the huge quantity of free fluid in the abdomen. (4) The very satisfactory result, inasmuch as the pregnancy was unaffected by (*a*) the torsion and compression of the pedicle, (*b*) the rupture of the cyst, and (*c*) the operation.

Banff. W. MANSON FERGUSSON.

PEDICULI OF THE EYELASHES.

THE following note may be of some interest to students of parasitic skin diseases.

L. N. T., aged 2 years, was brought to my consulting room with a maternal statement that insects were crawling on her eyelashes. On careful examination with a lens I could see on the upper eyelashes of the left eye a number of "nits" and three or four pediculi in active movement. With some difficulty I removed a couple of small parasites which under the microscope proved to be a male and female specimen of *Pediculus capitis*. The hair was quite free from infection, and all knowledge of disease there was denied, but I strongly suspected that there had been a "spring cleaning," and that one or two ova had fallen on to the lashes, become adherent, and provided the colony I discovered.

A weak nysol solution and ung. hyd. ammon. dil. soon destroyed both parasites and ova.

Hove. A. A. HILL, M.D.

LIQUID PARAFFIN FOR DISINFECTING NEEDLES AND SYRINGES.

LIQUID paraffin (*B.P.*), which boils at 360° C., is very convenient for disinfecting needles and syringes used for exploring purposes, for withdrawing blood, and for giving intramuscular injections, etc.

A simple method is to heat the upper part of a test tube three-quarters full of liquid paraffin until currents appear (indicating a temperature of about 150° C.) or rather longer, draw the heated fluid at once into the syringe until it comes into contact with the whole of its interior, and then eject it.

The advantages are the rapidity and simplicity with which complete sterilization can be effected at the bedside and the absence of deleterious effect on the needle, which, if always disinfected and cleaned in this way, never rusts, but remains patent and useful as long as it can be kept sufficiently sharp. The method is particularly useful for needles and syringes for giving intramuscular injections of mercurial cream.

Caution is needed in heating the paraffin, or it may spurt; but this is easily avoided if care be taken to move the test tube up and down in the flame whilst heating. An experience of this means of disinfection extending over six years has convinced me of its utility.

Bath. RUPERT WATERHOUSE, M.D., M.R.C.P.

Reports of Societies.

THE OXFORD OPHTHALMOLOGICAL CONGRESS.

THE annual meeting of the Oxford Ophthalmological Congress was held on July 10th and 11th. Members were lodged in Keble College; the scientific proceedings took place in the Department of Human Anatomy of the University (kindly lent for the purpose by Professor Arthur Thomson), where technical and commercial museums were also arranged. The programme opened on July 10th with an address of welcome by the Master, Mr. SYDNEY STEPHENSON. Major WALTER H. KIEP, R.A.M.C., read a paper on the ocular complications of dysentery, and Major EDGAR H. SMITH, R.A.M.C., a paper on quinine amaurosis, which were both well discussed by the members present. Dr. WILLIAM MCLEAN of New York described his further experimental studies in intraocular pressure and tonometry, and exhibited his latest model tonometer. A discussion on preventive ophthalmology was introduced by Colonel J. HERBERT PARSONS, C.B.E., consulting ophthalmic surgeon to the forces. Colonel Parsons pointed out that the scope of his subject dealt with the prevention of damage (*a*) to the individual and (*b*) to others: (*a*) included many subjects, such as prevention of damage to the eyes from accidents, defective illumination, deleterious rays and organisms, and the prevention of damage to health from headache, accident, fatigue, etc.; (*b*) included regulations for the prevention of the transference of contagious disease and rules for navy, army, air force, mercantile marine, railways, motor industry, cinemas, and so forth. The problems of preventive ophthalmology constituted a question of collective action, and were of particular value at the moment, when projects of reconstruction were to the fore. In connexion with the prevention of accidents to the eyes in factories, there was urgent need of a scale of awards for compensation founded upon scientific principles. The formulation of regulations for the public services demanded (1) a widening of the basis of education of ophthalmologists, (2) co-operation between ophthalmologists and other experts, and (3) improvement in the methods of examination of candidates and the selection of examiners. A good discussion followed the address, after which the Doyne Memorial Medal was presented to Colonel Parsons by the Deputy Master, Mr. Philip H. Adams. In the afternoon members and their friends were entertained to tea in the gardens of Trinity College by Mr. D. N. Nagel, M.A., and Miss Nagel. In the evening, after the annual dinner of the Congress in the hall of Keble College, when some seventy members and visitors were present, the annual general meeting of the Congress was held. It was determined, on the motion of Mr. J. B. STORY, to make representations to the General Medical Council in support of those recently preferred to that body by the Council of British Ophthalmologists concerning the instruction and examination of medical students

in eye work. Readers of the BRITISH MEDICAL JOURNAL are aware that the recommendations in question have been rejected by the General Medical Council.

On July 11th the proceedings began with a paper by Dr. S. LEWIS ZIEGLER, of Philadelphia, on the problem of the artificial pupil: knife-needle *versus* scissors. Dr. P. BAILLART, of Paris, followed with a communication dealing with his dynamometer for determining the blood pressure in the branches of the central retinal artery. Mr. A. F. MACCALLAN, O.B.E. (Cairo), read a paper on the seasonal variations of acute conjunctivitis in Egypt. Colonel A. H. TUBBY, C.B., C.M.G., entered a suggestive plea for investigation as to any possible connexion between skeletal asymmetry, on the one hand, and defects of the eye, on the other. A pathetic feature followed when a discussion upon employment for the blind was introduced by three blind speakers—namely, Mrs. ADOLPHUS DUNCOMBE, Captain PEIRSON WEBBER, and Captain TOWSE, V.C. The subject was discussed most sympathetically by the meeting, and it is hoped that some useful action will be undertaken by the Congress in connexion therewith. In the afternoon the Ashhurst War Hospital at Littlemore, near Oxford, was thrown open to members by Lieut.-Colonel T. S. Good, R.A.M.C.

The technical museum contained interesting exhibits by Dr. Thomson Henderson, Dr. Harvey Goldsmith, Dr. S. E. Whitnall, Dr. Harrison Butler, Dr. E. H. Edwards Stack, and others.

A pleasant feature of the Congress was the presence of representatives from Canada, Australia, Egypt, the United States, France, and Norway.

Reviews.

WAR NEUROSES.

SIR FREDERICK MOTT'S book, *War Neuroses and Shell Shock*,[1] is to a great extent an embodiment of the course of instruction given at the Maudsley Hospital to successive groups of officers sent by the medical service of the U.S. Army. There is a striking contrast between the readiness with which the U.S.A. authorities appreciated and took advantage of the admirable opportunities for instruction provided by this hospital and the lack of any adequate attempt at systematic instruction in our own service. Throughout this book the author is at great pains to insist on the bodily changes that underlie the so-called functional disorders. He recognizes that in such disorders we can always trace a disturbance of the mechanism of emotion: that is, a physiological disturbance. One result of the war was the study of neurological medicine by practitioners who were slow to recognize the fundamental importance of the study of nervous physiology.

The attractiveness of the school that deals exclusively with psychical manifestations and ignores the physical changes that underlie neuropathic disorders may to a great extent be accounted for by the perfectly legitimate repulsion that exists at the present day toward the crude materialism or its thinly disguised presentation in the form of the scientific agnosticism of the last century. This is, however, bad psychology and bad metaphysics. The study of mental disorder is really that of the disorders of conduct and of the mechanism by which conduct is expressed. It is open to us to have any metaphysical theory of mind that may please us. It would not, indeed, be difficult to show that the system of psycho-analysis implies, above all else, a mechanical conception of mind, but as physicians it is with the physiological mechanism of conduct that we are concerned. It is unfortunately true that at present only the grossest disturbances of the emotive mechanism can be detected.

Sir Frederick Mott lays stress upon the analogy between the nervous symptoms accompanying such obvious disorders of the endocrine glands as exophthalmic goitre and those occurring in the functional neuroses. He gives an account of the work of Crile and Cannon as to the part adrenalin may play in emotive discharges. It is to be regretted that he did not also include his own observations on the morbid anatomy of the sexual glands in dementia praecox, an omission which we hope may shortly be repaired.

After all is said, however, the paucity of our knowledge allows as yet only the enumeration of a very few objective signs of the underlying bodily disturbance. The measurements showing qualitative and quantitative differences from the normal in the psycho-galvanic response, undertaken in the author's laboratory, may be the first stage in the elaboration of physiological methods for recording the bodily changes accompanying functional nervous disorders. That a bodily emotional state may precede and determine the nature of a psychosis would be a platitude hardly worth stating were it not so constantly forgotten by the newer school of psycho-therapy. And yet most of us are only too familiar with the man who searches for some domestic misdemeanour on which to pour the swelling tide of irritation arising from an ill-conditioned stomach. Meredith has recorded for all time the change to a more rosy view induced in a justly incensed solicitor by the afterglow of a glass of old port.

As Matthew Arnold once said, the man who cannot understand the fifth proposition always has a taste for the infinite, and equally a doctor who is doubtful of the meaning of the plantar response is very often attracted by psychotherapy. To all such this book should prove a healthy tonic.

Most neurologists will share Sir James Purves Stewart's regret that the silly term shell shock was ever introduced. This book was written to help medical officers engaged in army and pensions work, and since shell shock bulks so largely as an official diagnosis, it would have been difficult to adopt a more scientific nomenclature without greatly impairing the utility of the book. The author has done the best he can by differentiating between commotional and emotional shock, but he is clearly not contented with the terminology. One result of the use of the term shell shock has been to create difficulty when we come to discuss it in relation to the condition known as surgical shock. It is by no means clear that the condition of commotional shock due to exposure to the effects of high explosives without gross injury bears any relation to that following extensive surgical or accidental injury. We infer that Sir Frederick Mott would much prefer to use the term concussion for the former condition; and though he discusses at some length the various theories of shock, he clearly finds little evidence in his own researches of lesions other than those referable to physical disturbance of the central nervous system, and the principal subject for discussion resolves itself into one concerning the mechanism by which such a disturbance is effected. The section on the pathological anatomy of concussion is well illustrated, and the evidence pointing to the occurrence of carbon monoxide poisoning in some cases is of great interest, though in the absence of a blood examination it cannot be conclusive.

Very important are the deductions from an inquiry into the previous history of cases of war neurosis. The author concludes that the majority of patients studied were soldiers who had a neuropathic or psychopathic taint. In 74 per cent. a family history of neurotic or psychotic stigmata was obtained, whilst a previous neuropathic constitution was present in 72 per cent. These figures may well alarm the most hardened optimist of the Pensions Ministry. Through the war the country has become responsible for the future of many thousands of constitutionally neuropathic men. Many will no doubt be restored to a precarious level of social utility, but many will continue as long as they live to be, with occasional remissions and relapses, a charge on the neurological hospitals of the State.

It is of some topical interest to note that the author found that 60 per cent. of the cases of war neurosis were total abstainers, which was a percentage double that of the cases admitted to a general hospital suffering from wounds or diseases other than nervous functional conditions. He appears to hold the view that fear of the consequences of taking alcohol is in itself an indication of a nervous diathesis, and that this, rather than the absence of the beneficial results of the rum ration, may to some extent account for the high percentage of neuropathic abstainers. Apart from this, however, the author has found the majority of officers strongly convinced of the value of the rum ration, and this opinion will be endorsed by most medical men who have seen the war from the

[1] *War Neuroses and Shell Shock.* By Sir Frederick W. Mott, M.D., LL.D., F.R.S., F.R.C.P. With Preface by the Right Hon. Christopher Addison, M.P. London: H. Frowde, and Hodder and Stoughton. 1919. (Demy 8vo, pp. xx + 348; illustrated. 16s. net.)

front line and not from the comparative comfort of the base and clearing hospitals.

The author deals fully with functional contracture, but is unable to put forward any evidence in favour of Babinski's theory of reflex contracture, a theory which, despite the great authority of its propounder, finds now very few advocates.

The subject of psycho-analysis is treated very fairly. It is recognized that the method may furnish valuable indications of the genesis of various obsessions, whilst war experience has amply refuted the sexual theories of Freud.

Treatment is discussed with the sanity and balance that we expect from Sir Frederick Mott. He has a very poor opinion of hypnotism as a curative agent. Like all experienced neurologists, he is well aware that rapid removal of symptoms in cases of hysteria can be effected by practically any method of common-sense suggestion. The much-advertised ten minutes cures have always been commonplaces of neurological hospitals, and indeed have often been effectively rivalled by quacks on the music-hall stage. We hope that the sane utterances of the author on this subject may be brought home to the ardent young psychologists and physicians who have of late made British medicine slightly ridiculous by their insistence on miraculous cures, both in the medical and the lay press. It is easy, of course, to understand how dramatic such cases may appear to those whose neurological experience dates with the war, and it is to be hoped that self-restraint will come with increasing knowledge. Sir Frederick Mott is very emphatic on the necessity for the establishment of an atmosphere of cure, and nothing, he finds, excites faith so much as seeing the benefit of treatment. The methods of re-education advocated are all simple, but he is no believer in leaving their application to the masseuse—a practice which, more than anything else, has been responsible for lack of success in treatment.

An excellent preface written by Dr. Addison augurs well for the future of neurology under the Ministry of Health. Attempts to exploit the new ministry will no doubt be made by numberless cranks, medical and lay, in favour of schemes of psychotherapy based on unscientific psychology and a more or less complete ignorance of the physiology of the nervous system; and it is some comfort to reflect that so long as such sane and scholarly work as this of Sir Frederick Mott's is recognized by those in power there will be little likelihood of their succeeding.

BRITISH HEALTH RESORTS.

TEMPORARY residence in the occupied territories in the Rhineland has served to prove to many of our military and civilian workers that in some respects they have a good deal to learn from their late enemies, but the thoroughness of the organization of foreign health resorts has always been appreciated by English visitors, whether in search of health or amusement.

The prolonged closure of all the German and Austrian "cure-places" has reacted upon the various health resorts of the British Isles, and hence the appearance of a new edition of Dr. NEVILLE WOOD'S book[2] on the subject should be welcome, as supplying an account of all the changes, additions, and improvements that the last few years have brought about.

Much has been done, both from the scientific and the practical standpoints, to bring British hydrotherapy into the prominence that it deserves, but it is still very far from the goal of universal recognition. Medical hydrology and climatology require constant and careful study by skilled observers working together, and this can only be done in properly equipped institutions, which must, at the same time, be rendered attractive to patients. This latter consideration has never been neglected by the managers of the spas of Central Europe, but only in a few of our own are sufficient pains taken to render treatment agreeable and at the same time effective.

Dr. Wood's book supplies a great deal of useful information as to ways and means, and is well illustrated by photographs showing the general features of most of the places mentioned, with detailed views of some of them. It would be rendered still more useful as a work of reference if supplied with a more comprehensive index and classification of diseases, with cross references.

Considerations of space have, no doubt, led to the compression of details with regard to many of the less popular places, but it is obvious that very many coastal and inland resorts are deserving of far more recognition than they have yet received. There is abundant scope for scientific study and for commercial development, in order that these properties may be fully investigated and adequately utilized. Dr. Wood's book points the way to such recognition, and it is to be hoped that future editions may be able to record the results of vastly increased effort.

DISEASES OF THE SKIN.

As Dr. SEQUEIRA'S *Diseases of the Skin*,[3] first published in 1911, has already reached a third edition, it is clear that he appeals successfully to a large number of readers. For a textbook on a special subject this comparatively rapid series of editions is no mean achievement, and it is indeed not too much to say that his book is a standard work in British dermatology. Compared with many of the Continental treatises it is relatively small, but this feature in no way detracts from its excellence; the reader will find in it a clear exposition of the more commonly seen skin complaints, besides many references to and short accounts of the rarer affections. Illustrations are of peculiar importance in a book of this nature, and they have been generously supplied in this volume. Whether representation of skin disease by means of colour photography, although at the moment fashionable, is always an unqualified success, may be a matter of opinion, but even here no ground for serious criticism exists.

In the text ample notice has been taken of recent contributions to dermatology. Good accounts are given of the skin affections of soldiers, such as trench feet and eruptions due to high explosives. As would be expected from Dr. Sequeira, the section on tuberculosis of the skin is especially full, and contains a mass of important and useful information.

At the present moment dermatology has assumed a position of special importance because of its close relation to syphilis. As a large increase in the incidence of this disorder is expected from the modifications of social conditions during the war, the views set forth should be critically examined. Most authorities will agree with the author that in the treatment of syphilis it is essential to combine mercury with the form of arsenical medication selected. The course recommended by Dr. Sequeira consists of four injections of arsenobillon, kharsivan, or galyl, followed by eight injections of mercury. Treatment is then suspended for a period of two months, when a "Wassermann" test is made; subsequent action depends on the result. Further, it is stated that every case should be under observation for at least two years, and that during this period occasional courses of mercury should be given, even if the "Wassermann" reaction be negative. This is sound advice, and will be endorsed by every worker with experience in venereal diseases. It would possibly have been a better guide had Dr. Sequeira given a more particular account of the form these subsequent mercurial courses should take, but perhaps he deems it wisest to leave these details to the worker, contenting himself with an expression of the principle to be followed.

The book is completed by several useful appendices, in which the various forms of treatment employed in dermatology are arranged under general headings. Here will be found much useful knowledge in a readily accessible form. The book repeats the attractive features of the previous editions, besides containing much additional information.

NOTES ON BOOKS.

DR. GABRIEL BIDOU has written a small book on instrumental orthopaedics,[4] in which he advocates certain principles which he appears to consider new, in the treatment of paraplegia especially. These are the active control of the thigh and leg by means of shoulder move-

[2] *Health Resorts of the British Islands.* Edited by Neville Wood, M.D. Second edition. London: University of London Press, Ltd. 1919. (Demy 8vo, pp. xvi + 253; illustrated. 6s. net.)

[3] *Diseases of the Skin.* By James H. Sequeira, M.D.Lond., F.R.C.P.Lond., F.R.C.S.Eng. Third edition. London: J. and A. Churchill. 1919. (Med. 8vo, pp. xiv + 644; 257 figs., 52 coloured plates. 36s. net.)

[4] *De l'Orthopédie instrumentale.* By Docteur Gabriel Bidou. Paris: Published by the Author, the Orphan Apprentice School. 1919. (Cr. 8vo, pp. 132; 20 figures.)

ments, the use of elastic springs in a special manner, and the multiplication of range of movement by the use of leverage and of pulleys. Of these, the first has been used for years in artificial legs, chiefly in America. Dr. Bidou employs celluloid in place of leather. His methods are well illustrated by numerous plates.

Professor ALLEN'S large textbook of *Local and Regional Anaesthesia*[5] gives a full account of the theory and practice of this important subject, and has in addition chapters on spinal, epidural, and other special varieties of local anaesthesia. The book, which has reached a second edition, is copiously illustrated, and is full of minute and practical directions as to the best methods of obtaining local anaesthesia in the various parts of the body. We recommend the work to the attention of all anaesthetists.

WE have received from Professor J. B. MORELLI, of Montevideo, a large work, running to 1250 pages, on *Artificial Pneumothorax*[6] and other methods of surgical intervention in pulmonary tuberculosis. Written in Spanish, these two volumes contain a great deal of information gathered from the extensive literature on the subject, most of it published in the last twelve or fifteen years, together with the author's comments and a full account of his own endeavours in this direction. Everything of importance connected with the surgical treatment of pulmonary tuberculosis seems to have been brought together in this lengthy compilation, which is well illustrated and reads like the composition of a fluent pen. Many references to the literature are given, and a number of illustrative skiagrams have been included at the end of the book.

The fifth edition of Colonel BLACKHAM'S concise and well written *Primer of Tropical Hygiene*[7] should be in the hands of all intelligent residents in tropical countries. It is full of practical directions, and may be strongly recommended.

The fourth edition of the treatise on *Practical Butter-making*,[8] by WALKER-TISDALE and ROBINSON, is a short and well illustrated account of a subject that has become one of surpassing interest in these margarine-ridden days, particularly to dwellers in towns where butter-making almost appears to rank among the arts lost during the war. In the hope of increasing the production of this indispensable article of diet we recommend the book to all readers, but especially to those who dwell in rural places.

HOPE MALLESON, in the short biography she has called *A Woman Doctor*,[9] gives a striking account of the life of Mary Murdoch of Hull. Dr. Murdoch was one of those charming personalities framed in a small and delicate body, but endowed with a large heart and a great capacity for work of a high standard, together with the power to attract others to help her in the various public activities in which she took a part. Dr. Murdoch was an excellent surgeon and physician, greatly beloved by the people of Hull, by whom she was affectionately known as "Our Lady Murdoch." Dr. Murdoch's early death came as a great blow, not only to her colleagues and personal friends, but to a very large circle of patients, rich and poor. The biography is well worth reading, if only to learn how much can be done and done well by an earnest lover of her fellow creatures.

[5] *Local and Regional Anaesthesia.* By Carroll W. Allen, M.D., Assistant Professor of Clinical Surgery at the Tulane University of Louisiana, New Orleans, etc. Second edition, reset. Philadelphia and London: W. B. Saunders Co. 1918. (Roy. 8vo, pp. 674; 260 figures. 28s. net.)

[6] *Pneumotorax Artificial y Otras Intervenciones en la Tuberculosis Pulmonar.* Estudio Critico y Clinico. By Dr. Juan B. Morelli, Professor de Clinica Terapeutica de la Facultad de Medicina. Vols. I and II. Montevideo: Imprenta Nacional. 1918 and 1919. (Roy. 8vo, vol. i, pp. 664; vol. ii, pp. 665-1246; 61 figures; 8 plates.)

[7] *A Primer of Tropical Hygiene.* By Colonel R. J. Blackham, C.M.G., C.I.E., D.S.O., M.R.C.P.E., D.P.H.Lond., A.M.S. Fifth edition, revised and enlarged. Bombay: G. Claridge and Co. 1918. (5½ by 4¼; pp. 154. 1 rupee.)

[8] *Practical Butter-making: A Treatise for Butter-makers and Students.* By C. W. Walker-Tisdale, F.C.S., and Theodore R. Robinson, F.S.I. Fourth edition. London: Headley Brothers, Ltd. 1919. (Cr. 8vo, pp. 143; 32 figures. 5s. 6d. net.)

[9] *A Woman Doctor: Mary Murdoch of Hull.* By Hope Malleson, B.A. London: Sidgwick and Jackson, Ltd. 1919. (Cr. 8vo, pp. xiii + 231; 4 portrait illustrations. 7s. 6d. net.)

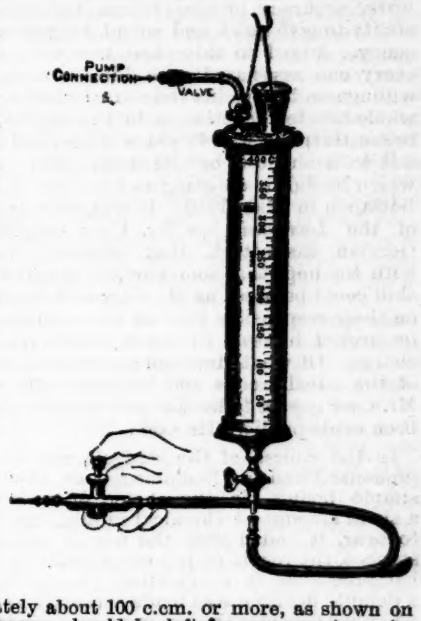
THE Paris Students' Association and its sports section ("Paris Université Club") are taking the initiative in providing a park for games of all kinds. The committee includes the President of the French Republic, the Prime Minister, the Minister of Public Instruction, the deans of all the faculties, and a large number of prominent personalities.

MEDICAL AND SURGICAL APPLIANCES.

A Pneumatic Injector for Local Anaesthesia.

MR. E. G. SLESINGER, M.B., F.R.C.S.Eng., sends the following account of an apparatus designed to overcome some of the difficulties and objections to the usual syringe method of injecting local anaesthetics, particularly in the case of extensive operations or when local anaesthesia is desired as an adjunct to gas and oxygen in abdominal work:

It consists essentially of a container composed of a glass cylinder in a metal frame with a graduated scale. This frame has a top and a bottom cap, each of which screws into position, and, being lined with a pad of composition material, forms with the glass cylinder an airtight chamber. In the top cap of the container are, first, a tube fitted with a tap, in the end of which is an ordinary Dunlop bicycle valve, and secondly, a funnel opening with a screw plug for filling. The bottom cap has an exit tube with a tap. From the exit tube, by means of a connexion with a bayonet catch, runs a flexible metal tube to the other end of which the injection valve is attached by another bayonet catch. The injection valve is so constructed that when at rest no fluid can flow through it, but on light pressure on the button with which it is provided a free flow is established. To the distal end of the injection valve any desired type of needle can be fixed by a bayonet catch connexion. The whole apparatus can be readily boiled before use.



When using the apparatus the fluid for injection is poured in through the filling funnel and the plug screwed home. Approximately about 100 c.cm. or more, as shown on the scale on the frame, should be left for compression. An ordinary bicycle pump is now screwed on to the valve in the top cap, the tap at its base is opened, and the apparatus is pumped up until further pumping is impossible. The tap on the valve is then closed, the pump is removed, and the apparatus is ready for use. The tap in the bottom cap is opened and a needle attached. When the needle is inserted into the tissues and the button on the injection valve lightly pressed, fluid will flow in under sufficient pressure to produce even pressure skin anaesthesia if desired. The apparatus has been made for me by Messrs. Down Bros., St. Thomas's Street.

The advantages which it is claimed this apparatus affords over the usual syringe method are: (1) It saves a *great deal of time;* (2) when once prepared it will serve for several cases; (3) it obviates the tremor of the operator's hand which results from the pressure used in syringe injections; (4) it permits more accurate control of the injection; (5) it enables the amount of local anaesthetic used to be seen at a glance; (6) unlike the syringe, it does not break or get out of order easily. A further use for this apparatus is in giving a large number of of serum injections rapidly—for example, antitetanus injections—where flaming the needle between cases is all that is needed. The rubber on the bicycle valve should be inspected from time to time and replaced when necessary, and a little vaseline occasionally put into the injection valve from below.

THE Congress of Uruguay has voted £4,000 for the enforcement of the recently enacted law providing for the compulsory testing of all milch cows with tuberculin.

TWO bursaries subscribed for by the colleagues and pupils of Senator Camillo Golgi have been founded in the University of Pavia on the occasion of his retirement under the age rule. They are to be awarded by preference to the sons of doctors fallen in the war. The freedom of the city of Pavia was at the same time conferred on the distinguished pathologist, and the municipality presented him with a gold medal and an artistically designed album containing the signatures of a large number of citizens.

GAS WARFARE.

THE HARRISON MEMORIAL LECTURE.

THE first Harrison Memorial Lecture was delivered before the British Pharmaceutical Conference on July 22nd by Mr. Francis H. Carr, who gave a sketch of Lieut.-Colonel E. F. Harrison's early life, a time of hardship and austerity out of which he won his way to independence solely by his own exertions. It was not by chance that Harrison undertook to do for this JOURNAL the work which resulted in the two trenchant volumes *Secret Remedies* and *More Secret Remedies*, published by the British Medical Association. Even as a youth he had a great dislike of untruthful advertisements, and as he grew older found an intense interest in unmasking fraudulent advertised remedies which in his opinion dishonoured the profession of pharmacy. Mr. Carr truly said that in Harrison there was a remarkable combination of extraordinary celerity in uptake, untiring assiduity in work, accuracy of observation, transparent honesty, and ability to give quick and sound judgement in every emergency. Added to this there was what must have struck every one associated with him—a certain humility and willingness to give his time to a small task with the same whole-hearted devotion as to the biggest. When the war began Harrison was 45 years of age, and had worked himself to a shadow, but he determined to enter the army, which he did by enlisting as a private in the Sportsmen's Battalion in May, 1915. It was, we think, not the sinking of the *Lusitania*, as Mr. Carr suggests, but the first German gas attack, that impelled Harrison to enlist, with the hope that somehow his chemical knowledge and skill could be used; as Mr. Carr said, it reflects great credit on those responsible that he was soon picked out for work he proved himself so extraordinarily competent to discharge. Of what Harrison accomplished in the protection of the allied troops and the discomfiture of the enemy Mr. Carr gave a fuller account than we think has hitherto been made public. He said:

In the course of the struggle gas warfare underwent immense change. Beginning with the use of relatively simple bodies, in the choice of which obviously only a small amount of chemical intelligence had been brought to bear, it ended with the use of complex organic substances, the result of intensive study and research which had proceeded in every allied country from the time that a definite decision was made seriously to adopt them; and when we consider the progress made in this short space of time, we cannot but conclude that if warfare is to continue among civilized nations, there lies in this field a capacity of destruction compared to which the use of explosives is likely to become insignificant. Commencing on April 22nd, 1915, with the use of chlorine in clouds of gas emitted from cylinders, by the autumn of the same year a large variety of obnoxious gases was being used with greater or less effect. Gases employed in warfare may be divided into those actually lethal in their effects and those employed chiefly to clear the enemy from a position, or to inflict such temporary damage as will put the individual out of action for a period. To this second class belong the lachrymators, which make the eyes and nose run; the sternutators, which cause sneezing, coughing, and vomiting; and the vesicants, that blister the skin and produce lesions which—especially in the case of mustard gas—take a very long time to heal.

Among the lethal gases employed were chlorine, hydrocyanic acid, cyanogen bromide, phosgene, ethyl dichlorarsine, and other arsines. Among the irritants were benzyl and xylyl bromides, bromacetone, bromethyl methyl ketone, chlorpicrin, ethyl iodoacetate, dichlorethyl ether, dibromethyl ether, arsenic trichloride, diphenyl chlorarsine, phenyl carbylamine chloride, and the famous ββ dichlorethyl sulphide, known as "mustard gas," but not to be confused with "mustard oil," to which it has no relation. Little or nothing was known at the outset of the chemical and physical properties of most of these substances; it will therefore be realized that in order to establish an effective defence against such a wide variety of compounds, it was necessary to submit them to the most searching examination, both chemical and physical, and by pharmacological methods to gain an insight into their lethal, lachrymatory, or sternutatory properties. Means had to be devised for identifying the gases, detecting their effects, and so forth. Thus was opened an unlimited field of research to which chemists or physiologists had previously directed little attention.

It was with sickened feelings of revolt against such debasement of science that British investigators first undertook this work, and many loyal English men of science hesitated to do so. Nevertheless, when the imperative need was clearly recognized, the task was undertaken with a thoroughness characteristic of British scientific effort. It is a great triumph for such efforts that through them the British gas defence excelled that of all other belligerents, and was ultimately adopted by most of the Allies. By a mistake in organization the offensive and defensive gas warfare sections were at first independent of each other; but the knowledge required overlapped at many points, and after a while the gap was bridged by the development of liaison, and, finally, the Anti-gas Department became a section of the Chemical Warfare Department, with Harrison at its head; points of contact were also established between the Anti-gas Department and the Royal Society's committee which dealt with physiological problems arising out of the war. All the anti-gas appliances designed in England were submitted to our forces in France before manufacture was undertaken, and Harrison himself made frequent visits to the other side in this connexion. Liaison was developed not only with the British Expeditionary Forces in the various theatres of war, but also with other allied armies, to which Harrison's department rendered extremely valuable services at most critical junctures. To the American army in particular great help was given by putting at their disposal the whole of our information, and the services of some of our best officers.

The problem of devising suitable protection was in the beginning relatively simple, for sodium hyposulphite and an alkali readily absorbed the offensive agents then employed, but the tremendous possibilities of gas warfare and the uncertainty as to what form it might assume were already keenly realized. Disaster threatened if no effective counter measures were devised to prevent a repetition of the shock produced by the first onslaught. As was suspected, fresh gases were soon employed, introducing a number of variable and uncertain factors. At first attacks were confined to gas emitted from cylinders in the form of a cloud which ran like a fluid over the ground and poured into the trenches at comparatively attenuated concentrations, but with the adoption of other methods of projecting the gases, much higher concentrations had later to be dealt with. In addition to the use of gases, atomized liquids and solids, spread by means of detonators from bombs, shells, and other projectiles, came into vogue. Indeed, the greater number of so-called "poison gases" are liquids at the ordinary temperature and pressure. There were later fine sprays consisting of suspended particles. These constituted quite a separate problem and one of the most difficult, for such spray or mist can only be removed by filtration through a fine medium, which, as will be readily understood, implies a resistance to breathing. A respirator had to be devised which could be used under conditions of severe physical exertion; eyes, as well as throat and lungs, had to be protected; all shapes and sizes of heads had to be fitted, and the equipment had to be able to endure the rough usage entailed in warfare in trenches deep in mud and water. Besides the protection of men, there were horses, mules, dogs, and pigeons for consideration.

Prior to the introduction of the box respirator various types of masks were evolved which gave satisfactory protection against the gas attacks of the time. Sodium thiosulphate, sodium phenate, hexamine, and an alkali were the principal absorbents employed. A helmet, with goggles inset, rapidly replaced earlier models, and Mr. E. W. Lucas, C.B.E., the well known pharmacist, rendered valuable service in producing at lightning speed large numbers of these helmets. Harrison's outstanding services commenced during the autumn of 1915, when, in conjunction with Captain (then Lieutenant) Sadd and other workers, he applied himself to the development of a form of respirator which would give very many hours of protection in such concentrations of gas as were then being encountered. The earliest appliances of this character, since known as the large box respirator, were manufactured at Christmas of that year. This was the first serviceable British respirator which contained as the protecting medium chemical granules and animal charcoal in a metal box. It had a rubber tube connected to a snout with a mouthpiece and nose-clip, the snout being worn over the mouth and nose. It was fitted with inspiratory and expiratory valves, and the snout was made of many layers of cheese cloth impregnated with zinc hexamine solution. Rubber sponge goggles were added for the protection of the eyes. The production of this apparatus in the early months of gas warfare, when the principles of respirator construction were almost unknown, coupled with the fact that it gave very efficient all round protection, make it one of Harrison's greatest achievements. The next form of protective apparatus which was

worked out in the Anti-gas Department was the small box respirator—a replica of the large one with certain improvements. It was composed of some thirty-five component parts, requiring for their assembly a multitude of operations and for their production an immense number of different trades; and when one considers the absolute necessity of a high uniform standard of perfection for the finished respirator—for even a pin-hole leak might mean the death of the wearer—it is seen what a gigantic task the organization of production became. Colonel Harrison was greatly helped by Sir Howard Spicer and many others, and by the introduction of a system of supervising by military inspection officers in each factory, and with technical assistance of the most expert kind, he was able to secure from the moment of its first issue the very high standard of perfection which won for the box respirator that faith and reliance on the part of our armies which is a true measure of its wonderful success.

It is difficult to realize the large amount of work involved. There was the cutting out and sewing of the mask, the making of the eye-pieces and nose-clip, the doping of the mask, the making of the tins, of valves, and the flexible rubber tubes, known as "Gorman" tubes, the expanded metal divisions, filter pads, and so on. Under the general direction of Colonel Horrocks, during less than a year from the autumn of 1915, the box respirator had been conceived, designed, submitted to field tests, accepted, and its manufacture established on the very large scale of an output of some 20,000 to 30,000 a day. Harrison may be said to have been the leading spirit of the small box respirator rather than its inventor; an opportunity which gave him the scope he needed was presented, and he made the fullest use of it. His success lay not merely in his personal achievement, but in inspiring and co-ordinating the powerful efforts of many others with his own. The work had grown immensely when Colonel Starling, who had been for a large part of the time in charge of this department, left it, and Harrison succeeded him. In the period which followed the chemical, physical, and mechanical tests which each box respirator had to meet were elaborated and improved. Every part was tested and inspected for weaknesses and leaks. Means were devised for proving their effectiveness in meeting every one of the gases employed by the enemy. The output was brought up finally to a daily supply of 50,000 respirators, and in all some twenty millions were supplied.

A great feature of the respirator was the large capacity of the box containing the absorbents which could be varied at will. Assisted by the Intelligence Services and by a large scientific staff carrying out chemical, physical, and physiological research, Harrison and his colleagues were able so to modify the contents of this box that the complete success at first attained was continued until the end of the war. Indeed, after the first few months of gas warfare the enemy never used a gas against which our troops were not amply protected. Among the absorbents employed the principal was a chemical granule composed of an alkaline mixture consisting of lime, caustic soda, and permanganate, which had been invented and worked out by Bertram Lambert at Oxford. Harrison with great enthusiasm worked on this conception and produced a convenient formula for such a mixture. It was necessary that the granule should be porous, yet quite free from dust, and free also from any tendency to disintegrate into dust when submitted to vibration. Harrison produced such a granule in the laboratory, and the formula was transmitted to Messrs. Boots at Nottingham, who, in co-operation with Harrison, modified it to make it suitable for large scale manufacture. Great difficulties had to be overcome owing to the exathermic nature of the reaction and to the instability of permanganate under the conditions involved.

Another important constituent of the respirator was charcoal. Animal charcoal was at first employed, but later wood charcoal, prepared under certain special conditions, was found to be more suitable. The method of manufacture of a hard and efficient wood charcoal worked out in the Anti-gas Department, was installed on a large scale, and at the time of maximum output involved the charring of 300 tons of wood per week. The canister, when complete, had the following contents, arranged in the order given:

A wire gauze dome,
A thin layer of cotton-wool over the gauze,
A layer of mixed granules with charcoal,
A layer of cotton-wool,
An expanded metal diaphragm,
A second layer of granules and charcoal,
A layer of cellulose wadding,
A second expanded metal diaphragm,
A third layer of mixed granules and charcoal,
A piece of towelling to prevent dust entering the breathing tube,
A piece of expanded metal, and
Two springs to hold all the contents in place.

In addition to meticulous scrutiny of the several parts before they were assembled as a complete apparatus, the respirators were continually being tested, both in the laboratory and on men, to determine their resistance against gases, vapours, and smokes. Those who have been spared all the risks and horrors of war will not wish me to omit reference to the intrepidity with which, in the ordinary routine of testing the apparatus, men have daily entered chambers containing high concentrations of lethal substances—such, for instance, as phosgene—and remained there for a great length of time until the respirator had begun to fail. An idea of the improvements effected may be gained from these tests; they were first carried out in concentrations of 1 in 10,000; this proportion was raised in 1916 to 1 in 1,000, and in 1917 to 1 in 100. When this last stage was reached, a change of method grew imperative, as the concentrated gas proved very irritating to the skin, and the clothing of the wearers became rotten. The arrangement then adopted was to place the respirator in the gas chamber, passing the breathing tube through the wall of an ante-chamber in which the subject sat. But, in addition to these trials, standard laboratory tests were established which in many ways were to be preferred, because they eliminated certain variable factors, such as the irritability of the respiratory tract and the rate and depth of breathing of the individual. For this purpose, and for use during gas attacks, simple tests for identifying the gases were devised after much research, and the results obtained have been of great service, especially in the laboratories, for it was only by the discovery of such simple means of detecting the presence of traces of gases, and of roughly estimating their concentration, that the standard laboratory tests referred to were rendered possible. As an example, a test paper was devised for detecting phosgene and chlorine at dilutions of one in a million. This paper is rendered sensitive by a mixed solution of p. dimethylamino benzaldehyde and diphenylamine. In summarizing Harrison's achievements we have especially to acknowledge the co-ordination of pure scientific work, technical effort, and manufacture, and withal his wonderful personal influence in gaining from every section of the various workers concerned, and notably from each individual of his staff, the highest possible standard of emotional effort. This is the essential quality of a great organizer; Harrison possessed it in a remarkable degree. In him it was combined with a rare and conspicuous courage—a combination which truly made him a great soldier. In 1917 he was promoted to lieutenant-colonel and awarded a C.M.G. At the end of this year the department concerned with offensive gas warfare was linked with the Anti-gas Department. Harrison's organizing powers were given an even wider scope, for the offensive had grown to immense proportions, and he was made deputy controller. His services in this critical period were of immense value; he became the acknowledged leader of chemical warfare, and finally was made its director. Shortly before his death he learned the news that he was to be promoted to the rank of brigadier-general, and also that he had been awarded the French Légion d'Honneur. For a chemist who had joined in the ranks thus to climb to one of the highest positions in the army was a truly remarkable achievement.

THE TEACHING OF MEDICAL HISTORY.

ENGLAND is almost the only country where there is no adequate provision for the teaching of medical history. In France, the United States, Switzerland, Norway, Holland, and Canada, chairs of this subject have long been in existence; in Germany and Austria not only are there several professorships of medical history but, in Leipzig as in Vienna, there are fully equipped institutes for its more detailed study. Great activity in the same direction has been exhibited in Denmark, Portugal, Belgium, and especially in Italy. In this country the subject has been ignored by all our universities except Edinburgh, where a part-time lectureship has been established.

Yet the advantages to be derived from an acquaintance with the history of medicine are many, while the burden which it places on the curriculum is *nil*. Dogmatism, the current foible of the working scientist, finds in history its best antidote. Formlessness and diffuseness, the literary dangers which threaten to crush progress by making

scientific literature unreadable, and therefore inaccessible—these find their natural remedy in the study of the great models of the past. If we reflect that William Harvey compressed the greatest of all medical works into fifty-two pages, and that William Gilbert needed hardly more space to detail twenty years' magnetical experiments, while to-day the International catalogue of the mere titles of scientific papers fills seventeen annual volumes, the urgent need of better literary form may be realized.

The thought of our age is separated from that of the time that went before us by the fertilizing doctrine of evolution. It is a presentation of truth which has done as much to stimulate the studies of the historian as it has to guide the researches of the biologist. Living things, as Theophrastus tells us, must be studied not only and not so much for what they are as for what they are becoming, and to understand what they are and what they are becoming we must know what they have been. The whole of evolutionary teaching may be summed up in the phrase that organic products are the outcome of their history, and can only be understood when their history is known. Yet is there anything more truly organic than ideas? Can any doctrine be comprehended in its entirety until we know how it came to be what it is? Still less can any great system, such as that of modern medicine, be understood without reference to its past. The history of medicine, like other evolutionary studies, gives an interest to present phenomena that can be obtained through no other channel. It brings into practice and into research the only effective counter to the cynicism of the middle years when the eagerness of youth is passed and the mellowness of age is not yet upon us. It forms a real foundation of that happiness in his work and pride in his profession that is the chief guarantee of the doctor's efficiency.

There are those who think that medical history is best left in the hands of amateurs and to the spare time of men who have the leisure and literary gifts for its pursuit. This view is partly true, though it also contains a fallacy. No one interested in the history of medicine would or could wish the solace of study removed from those who love it, for whom it is a real *re-creation*. But only those who have spent years in historical research—and there is no form of research that makes greater claims on time and energy—only those can realize the amount of fruitless labour and the endless disappointments that await the unequipped labourer. To make the efforts of the casual historical worker effective and fruitful it is before all things necessary for him to have experienced guidance. Historical research, like every other form of research, has its own technique, and a technique very laborious in the acquisition. Even properly to find one's way about a great library needs months of experience. But for a localized and limited field of investigation an efficient guide may help the worker to acquire his technique with comparative ease and rapidity, while without such aid he may wander long and then abandon his task in despair or produce immature and imperfect results.

For a generalized interest in history and effective work along historical lines the first need is the establishment of two or three chairs to be held by men who would devote their lives to the task of setting forth the history of medicine as a continuous whole. Such duties might well be combined with the task of delivering short courses of historical lectures in the various medical schools. There is no reason why one such lecturer should not be shared by a number of schools and his course, instead of further overburdening the curriculum, would do something to lighten it by giving it meaning and connecting its various parts.

The second thing needed for the adequate study of medical history is the establishment, preferably in London, of a special institute. It need only consist of a couple of rooms near one of the great libraries, in which would be collected all the reference books most important for medical historians. These works number some seven thousand, and only when they are placed together is it possible for the student to realize the scope and method of his subject. The collection in one place of all these books would save an immense amount of the researcher's time and would help him to place his work in proper relation with that of others. The institute should be in no sense a museum or collection of old books, but a place where all the necessary aids to research are brought together. To such an institute the researcher might bring his manuscripts, his transcripts, or his discoveries on the one hand, or his inquiries, his needs, or his difficulties on the other, and be met by an expert able to help him.

Those who are best acquainted with the work done in other countries for the history of medicine will have no doubts that the introduction into this country of a systematic treatment of the subject will do much to raise the educational standing and with it the self-respect happiness, and efficiency of the medical profession as a whole.

CHARLES SINGER, M.A., M.D.Oxon.,
F.R.C.P.Lond., F.S.A.,
Tutor of Exeter College, Oxford.

PORTRAIT OF SIR CLIFFORD ALLBUTT.

WE publish below a further list of the names of subscribers to the Fund for presenting Sir Clifford Allbutt with his portrait. It will be seen that some subscriptions have recently been received from India and America. As it is intended shortly to close the Fund, the Treasurer requests all those who wish to take part in the presentation, but who have not yet notified their intention, to send their subscriptions without delay. The amount is limited to one guinea. Cheques and postal orders should be made payable to the "Sir Clifford Allbutt Presentation Fund," crossed London County, Westminster, and Parr's Bank, and addressed to the Treasurer of the British Medical Association, 429, Strand, London, W.C.2.

After the portrait in oils has been painted it is intended to commission a mezzotint engraving from it which subscribers to the Fund will be able to purchase for their own collections.

Dr. Arthur C. Alport (Johannesburg)
Dr. W. Armistead (Cambridge)
Dr. Elizabeth Bell (Belfast)
Lieut.-Gen. Sir C. H. Burtchaell, K.C.B., A.M.S. (India)
Dr. F. G. Chandler (London)
Dr. James Craig (Congleton)
Surgeon Lieut.-Colonel Decimus Curme (Bournemouth)
Dr. F. Deighton (Cambridge)
Dr. G. A. Ferraby (Nottingham)
Captain W. F. T. Hamilton, O.B.E., M.C., R.A.M.C.
Dr. F. A. Hepworth (St. Albans)
Dr. C. Courtenay Lord (London)
Mr. J. Y. W. MacAlister (London)
Dr. J. C. McVail (Edinburgh)
Colonel A. Martin-Leake, V.C., F.R.C.S. (Calcutta)
Dr. A. P. Moore-Anderson (London)
Dr. W. D. Newcomb (Cambridge)
Sir R. Douglas Powell, Bt., K.C.V.O. (London)
Dr. David Reisman (Philadelphia)
Dr. Robert Sevestre (Leicester)
Sir StClair Thomson (London)
Captain E. B. Verney, R.A.M.C.
Dr. H. Wales (Gargrave, Leeds)

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee held on July 8th twenty cases were considered and £200 voted to fifteen of the applicants. The following is a summary of some of the cases relieved:

Widow, aged 52, of L.S.A.Lond. who died in 1914. Receives £2 10s. per week from the sale of the practice, and £2 from children. Has five children, only the two eldest working, the third at home, and the two youngest at school. Requires help owing to the increased cost of living. Relieved four times, £35. Voted £10.

Widow, aged 39, of M.D.Durh. who died in 1917. Was left totally unprovided for with seven children, now aged 17 to 3 years. Only the eldest is working, and she helps all she can. Applicant receives £150 from dividends and about £52 by letting rooms. Brother-in-law pays rent, and relations help a little with education. Relieved twice, £30. Voted £12.

Daughters, aged 48 and 47, of M.R.C.S.Eng. who died in 1892. They live on the West Coast and take in paying guests, and during the last twelve months have made £70. Rent and rates, £79. They find it necessary to apply for help owing to the very short season in 1918 and the increased cost of living. Relieved six times, £60. Voted £10.

Widow, aged 53, of L.R.C.P.and S.Edin. who died in 1893. Applicant suffers from ill health, and is unable to work. Has two sons who are both in the navy, and help whenever possible. Pays £6 a year rent. Relieved sixteen times, £161. Voted £18 in two instalments.

Subscriptions may be sent to the Acting Honorary Treasurer, Dr. Samuel West, at 11, Chandos Street, Cavendish Square, London, W.1.

British Medical Journal.

SATURDAY, AUGUST 2ND, 1919.

THE PANEL CONFERENCE AND THE REPRESENTATIVE MEETING.

FROM the report published in the SUPPLEMENT of July 26th of the Conference of Local Medical and Panel Committees and the report of the Annual Representative Meeting in the present issue it will be seen that the Conference occupied itself mainly, though by no means exclusively, with the present insurance medical service as discussed in the report of the Insurance Acts Committee, known as document M. 25, while the Representative Body, in dealing with the subject of a public medical service, largely confined itself to the extensions of the present service for the insured which may occur when the Ministry of Health is in a position to make a thorough revision of the service. Thus, though some overlapping was unavoidable, the Representative Meeting was supplementary and in no sense rival to the Conference, and where the two bodies went over the same ground there was practical agreement in their decisions. The astounding apathy of many members of the profession towards the whole subject was conspicuously absent at both meetings, and there was abundant evidence that the report of the Insurance Acts Committee had been carefully studied by the Representatives. In a few points, put forward more or less tentatively by the Committee, certain modifications were made by the Conference, but in spite of some general expressions of dissatisfaction with this document, founded on an idea that the Committee had allowed itself to be dictated to by the Commissioners, the Conference passed a practical vote of confidence in the Committee by authorizing it to negotiate definitely with the Government for the new terms and conditions of service for 1920 on the lines of M. 25 and the two interim reports as amended, subject to full consideration of suggestions from Panel Committees and to the resolutions of the Conference.

It is to be noted that in the Representative Meeting and in the Conference, as well as throughout the profession, there has been disclosed an almost unanimous discontent with the present insurance medical service as it affects both panel practitioners and insured persons. The broad lines of the service perforce remain as the Insurance Acts have fixed them, but the innumerable irritating details that have been superimposed by regulations are seen to have distorted what might conceivably have been a sound medical service into a service which, to the better class of practitioners, has become hatefully irritating, and in the hands of less conscientious practitioners is as slipshod as can possibly be imagined. The Insurance Acts Committee has set itself to find a remedy for this, and it starts with the definite declaration, in which it is supported by both the Representative Body and the Conference, that the remedy will not be found, as some have suggested, in a whole-time general practitioner State service. The discontent with one aspect of the present service was forcibly brought out at the Representative Meeting in the debate on paragraph 106 of M. 25. The meeting strongly supported the Council and the Committee in declaring that insurance doctors are crippled in their work by the limitations of the present service and in urging the necessity for the inclusion in the insurance service of provision for (*a*) consultant or specialist non-residential services, (*b*) laboratories, and (*c*) a nursing service. To this was added a resolution that arrangements should be made for auxiliary hospitals in which general practitioners could treat their own patients; but an amendment opposing any extension of medical benefit except consultant's advice for the present insured, was lost. A recommendation was also carried without dissent to the effect that general practitioner attendance and treatment is the only foundation on which any systematic provision of other kinds of treatment can properly be based, and that, speaking generally, such additional services should be available only on the recommendation of a general practitioner.

Another important recommendation of the Council was adopted by the Representative Body to the effect that the provision of advice and treatment now made, or about to be made, at maternity and infant welfare centres, at school clinics, at venereal disease clinics, and at tuberculosis dispensaries, should at once be brought into proper relation with the domiciliary attendance of general practitioners. Resolutions were also carried for the establishment at once of clinical and pathological laboratories for the whole population, the clinical medical staffs to be appointed on a part-time basis and remunerated on a time basis, or on a "payment per attendance" basis, a medical committee playing an important part in their selection. It was further resolved that general practitioners, having special qualifications, should be eligible in the same way as consultants or specialists, and that all general practitioners should be given opportunities for taking suitable part in the work of the clinics. The Representative Meeting, however, recognized that some time might elapse before these services could be organized, and therefore postponed the question whether such services should be regarded as an essential part of the service from early in 1920.

As to the provision of residential institutions or the extension of the service to dependants of the insured or to other classes of the community, it was resolved that no steps should be taken without further conferences nor without reference to the Divisions of the Association, and if necessary a special meeting of the Representative Body. To this was added a further resolution to the effect that no State medical general practitioner service should be provided for any persons whose total income exceeds £250 a year and who would not already have been provided for under the Insurance Acts.

The remaining sections of the annual report of Council bearing upon the Ministry of Health having been approved, the Representative Body discussed the employment of consultants, and motions were carried to the effect that when patient and doctor desired a second opinion this should be obtainable without reference to the referee, who should only be brought in when the patient wished a second opinion which the doctor thought unnecessary; and that, in submitting a patient for a second opinion, the doctor should furnish a statement of the case as is done in private practice. The meeting recorded the opinion that excessive demands for expert services should be investigated by a medical committee chosen by the profession and not by a lay or mixed committee. It was further decided to object to the payment of the fees of consultants or specialists out of money allocated to the payment of capitation fees to practitioners. The remainder of the supplementary report of the Council was then approved; it dealt with the

constitution of the medical consultative council under the Health Ministry and also the continuance in office of the Ministry of Health Committee of the Association. This completed the first day's work of the Representative Meeting so far as the Ministry of Health is concerned.

We propose in our next issue to take up some of the other questions discussed in the document M. 25 which relate rather more specifically to national insurance and were considered in greater detail by the Conference. It may be said here that in debating in such detail the many matters referred to in M. 25 relating to the insurance medical service, there was evidently in the minds of both the Insurance Acts Committee and the Conference an underlying assumption that the present panel system will be continued, for a considerable time at any rate, in its main outlines. As the Ministry of Health Act is held to go no further than the central co-ordination of the various Government departments dealing with health matters, which is sure to be a long business, no fundamental revision of the present insurance medical service seems to be possible without legislation, and this may be delayed for some time owing to the pressure of other parliamentary business.

R.A.M.C. CONTRACTS.

MR. GLADSTONE once perplexed his supporters and amused his opponents by asserting that the country was not at war, but in a condition of belligerency. The phrase was unhappy, as many of the utterances of that distinguished Parliamentarian were, but the distinction he had in mind is very real, and has its application at the present time. There may be fighting between two nations, though there has been no formal declaration of war, and the fighting may be stopped before declaration of war becomes necessary. For instance, who will say what is the true position of the British forces in Russia, and, still more, what are the relations of the Government of India with the ruler of Afghanistan? There is fighting, and apparently a good deal of it, on the frontier, though both the Ameer and the Viceroy profess pacific intentions. Again, who can answer the question whether the European war is over? Peace has been concluded with Germany, but not yet with Austria and Bulgaria. Many Acts passed by Parliament during the years of war contained provisions which were to come to an end at the termination of the war, and the same is true of many contracts. An Act of Parliament which was passed last November "to make provision for determining the date of the termination of the war" authorized His Majesty in Council to declare what date should be treated as the date of the termination of the war. An Order in Council will presently fix the date. The original intention seems to have been that it should be August 4th, but the Order has not yet been issued.

Among the contracts which will be affected by the date declared in the Order in Council will be the contracts of medical officers for temporary service in the army. After the virtual abolition of the yearly contract in 1917 the period of the standard contract was "until the termination of the present emergency or until my services are no longer required, whichever shall first happen." Every contract in the form quoted above will lapse on the date of the official termination of the war. This is true in theory, but in practice it is subject to some serious exception. Officers and other ranks of all arms and branches of the service, though eligible for demobilization, are being temporarily retained in India under War Cabinet authority, in order to tide over the present emergency in that country. Probably the same is true of North Russia. Orders have been issued that all who have been so retained in India shall be given onward passage to the United Kingdom at the earliest possible opportunity, and immediately the situation in India permits of their release. Their return home, therefore, is contingent. In the first place the Government of India is apparently the authority to determine whether the situation in that country permits their release, and in the second place their return must depend upon there being accommodation for them on homeward bound ships. For the last six months or more there has been an outcry in India because of the delay officers and civil servants due for leave find in getting away from that country, owing to shortage of shipping. This has not yet been relieved. But the real grievance will be if men under such a contract as has been quoted should be retained after the appointed date.

There was some hope that Mr. Churchill on Tuesday might throw a little light on the general situation, which would apply equally to Russia and India. He did not come up to expectations; he said, what we have all heard often before, that demobilization had been delayed by the prolongation of the negotiations before a final settlement with Germany was reached, and also by difficulties in India and in Egypt. He stated, what was also well known—that demobilization had now proceeded until more than three million officers and men had reached their homes. It was, he added, now going on at the rate of five thousand or six thousand a day, and he expressed the hope that it would be accelerated during the next months. Voluntary recruiting, he said, was going on at the rate of four or five thousand men a week, and the volunteer regular army now amounted to 225,000 men; in addition 25,000 men in the Armies of Occupation had volunteered to stay on. He added that, unless some unexpected evil turn of events occurred, conscription, which was dwindling every day as discharges took place, would pass from the statute book at the expiration of the present Military Service Act.

Voluntary recruiting for the medical service of the army, however, is not proceeding satisfactorily. The recent offer of consolidated pay of £550 a year has not secured many candidates for temporary commissions in the R.A.M.C. There may be differences of opinion as to the reason, for the terms were such as it might be thought would prove attractive to young men, especially those newly qualified who have not undertaken responsibilities at home. No doubt the increased cost of living and the consequent increase in civil wages and salaries has an effect, but we suspect that distrust of the War Office is at least as influential. The offer has not been well received by officers now serving or recently demobilized, and no doubt their opinion must greatly influence young men who have not yet served. The war bonus which officers of all branches of the service have been receiving since February will come to an end at the date officially declared as the end of the war, but it is natural that medical officers should compare the pay they are now receiving with the consolidated pay of £550 a year and be dissatisfied when they find there will be a reduction. But in addition there is the uncertainty introduced into the new contract by the provision that the period of service shall continue until the expiration of twelve calendar months or until the officer's services are no longer required, whichever shall first happen. This, as some of our

correspondents have said, is a one-sided contract, inasmuch as the War Office would be able to dispense with the officer's services in a few months, whereas the officer would be bound for a year. The whole trend of Mr. Churchill's apology was to encourage the belief that the strength of the army would be very rapidly reduced, and this must increase the hesitation with which the contract is regarded. Medical officers are disposed to think that if they are to be demobilized to civil work within a very short time they may as well take the plunge at once.

We are not prepared to say that if the terms of the contract were modified, so that the rights of the individual officer under it were the same as those of the War Office—namely, that an officer would have the right to stay on for a year if he chose or leave earlier after reasonable notice—voluntary recruiting would be improved, but there can be no doubt that such a modification of the contract would be equitable. Meanwhile, the need of the army for medical officers is great if medical officers who have served long are to be demobilized, as they have the right to ask. Mr. Churchill spoke of an army of something under a quarter of a million, but as a matter of fact the military forces now on foot must number at least a million, and there is a call upon the medical profession to provide the proper number of medical officers. Its members will, no doubt, be willing to respond to the call if the War Office will show itself willing to treat them justly and considerately. We invite Mr. Churchill to give attention to the problem, for we are bound to say that the present difficulty is largely due to his own action early this year, when suddenly, without consultation with the medical profession, he scrapped the scheme for demobilization carefully worked out beforehand by the Central Medical War Committee in consultation with the Ministry of National Service. The scheme, had it been loyally carried out, would have avoided many of the difficulties now pressing upon the War Office and have prevented some of the profound distrust and dissatisfaction at present felt.

A LESSON OF THE WAR.

THE address given by Sir Anthony Bowlby to the Abernethian Society of St. Bartholomew's Hospital, published this week, will revive many memories, and will be of interest alike to those who had to stay at home and those who served with him abroad. His general review of the growth of the surgery of the forward areas of the British army in France is a valuable contribution to the history of medicine. It contains information, especially about the number of casualties from the various battles, which will be new even to those who served in France; for the medical officer with a field ambulance, a casualty clearing station, or at the base, was never able to obtain any wide view of the actual results of these actions and the call they made on the resources of the Army Medical Service. The story begins just before the first battle of Ypres, when there were six casualty clearing stations and the wounded numbered 13,000. The casualty clearing station at the beginning of the battle was, as had been arranged, no more than its name implied—a unit to serve for evacuation, which practically meant that it took care of men while they were waiting to be put on the ambulance train which would take them to the base for any operation that might be necessary. Sir Anthony Bowlby came home early in December, 1914, and brought with him an article on the work of the clearing hospitals during the previous six weeks, which was published in the JOURNAL of December 19th. He therein said that a clearing hospital was essentially a mobile unit, and must be able to move with the army at the shortest notice. Consequently it was not equipped like a general hospital, for it had no tents, no huts, stretchers instead of beds, and no such luxuries as *x*-ray and pathological outfits. The lecture we publish today is largely the story of how this conception of a clearing hospital was replaced by the casualty clearing station, as it was known later, indeed, after no long time, for by the end of 1914 the medical authorities in France were convinced that the units must no longer exist merely for the purpose of evacuation, but should be allowed to treat, operate upon, and retain a wounded man. How well this duty was discharged Sir Anthony Bowlby relates in chronological order. The numbers of wounded increased from the 13,000 at the first battle of Ypres and the 12,000 at Neuve Chapelle to 60,000 at the second battle of Ypres, to 300,000 at the Somme, to 500,000 in 1917, and to 300,000 during the hundred days in which the war was brought to a successful end. The casualty clearing stations became hospitals, with a staff of skilled surgeons trained on the spot, with anaesthetists, pathologists, and a staff of nursing sisters, so that a man was as well off in one of them as he could be in the best appointed hospital in peace. After this organization had been brought to perfection it was possible, at the third battle of Ypres (the Passchendaele fighting) to treat under anaesthetics at the casualty clearing stations 60,000 out of a total of 126,000 casualties, or about 30 per cent. of those who passed through. This was brought about partly by the system of borrowing surgical teams, consisting of a surgeon, an anaesthetist, a nurse, and a highly trained orderly. In 1918 the defects of a system which had grown up and was thoroughly well adapted to stationary warfare, were disclosed. When the Germans pushed through in March, 1918, some casualty clearing stations, with all their elaborate equipment of huts, electric plant, *x*-ray rooms, had to be abandoned to the enemy, although no patient in any one of them became a prisoner. Thereafter when the Germans were so completely defeated in the Arras section at the end of March the conditions began to change, and when the great allied attack, begun on August 8th, was successful, and it became necessary to move casualty clearing stations forward rapidly, transport difficulties became serious. Sir Anthony Bowlby expresses the opinion that if front-line surgery is to be maintained at the right standard during an advance casualty clearing stations must have more transport. The difficulties created by the want of it were evident to everybody in France in August and September of last year; in certain places the casualty clearing stations were held up twenty and thirty kilometres behind the line, sometimes even more. It is true that to move some of them, with all their impedimenta, at that time, would have meant the use of thirty or forty lorries for several days. It would be unreasonable to ask for transport on this scale as a permanent part of their equipment, but for an emergency it is not absolutely necessary to move forward the whole of a casualty clearing station; a section would be enough to establish an advanced operating centre; the equipment for this could, we believe, be taken forward in four lorries, and the possession of this number would at all times greatly facilitate the work of the unit. This aspect of the matter will, we hope, receive full consideration when the lessons of the war are under review by the Army Medical Department, the War Office, and Parliament. It would mean a certain amount of expenditure, but the money would be well spent.

SITES, LAY-OUTS, AND PLANS.

THE Housing Department of the Ministry of Health has started a journal—*Housing*. It consists of sixteen pages, costs threepence, and is to appear once a fortnight. This first number has a send-off from Dr. Addison, in which he invites the country to celebrate the termination of a desolating war by a united and determined

effort to sweep away the evil slums and wretched cottages which disfigure our towns and countryside, and to replace them by healthy and pleasant houses. Schemes for the erection and completion of new houses have, he says, come in in good numbers, but a considerable proportion of local authorities are still behindhand even in this respect; and he goes on to express the hope that those local authorities which have not yet submitted schemes will act on their own initiative before the compulsory clauses of the new Act become operative. *Housing*, he says, is not to compete with existing periodicals, and there will be no departure from the policy of giving the press all information, but the new venture is intended to serve as a regular means of direct communication between the department, local authorities, and the Ministry's staff up and down the country. The general make-up of the new periodical very much resembles that of most technical journals. There are reports of meetings, dates of conferences, reviews of books and periodicals, lists of applications received from local authorities as to sites, lay-outs, and house plans, and lists of proposals approved and tenders submitted. Three pages of designs, showing elevation and plan, for blocks of four cottages, are given; they are based on drawings in the Manual, and present a general similarity, but certain differences are shown; thus, on the ground floor in two of the sets a living room and scullery are provided, but in the third a parlour also. The houses in each set are not all of exactly the same size; in some one bedroom is larger, and instead of the bathroom being on the ground floor it is on the first. Perhaps the most interesting part of the periodical is a page dealing with points arising in the Ministry's correspondence. Thus, with regard to baths, it is said that where in rural districts there is no proper water supply the provision of baths should not be insisted upon, though space ought to be left for a bath should it become possible to add it. In the houses shown in the plans there are three bedrooms, but seaside towns, where the working classes practically all take in visitors, it is proposed to make four bedrooms as the maximum, but in special circumstances to agree to a higher proportion of houses with four bedrooms than would otherwise be regarded as proper. Eight houses to the acre is to be regarded as the maximum, not the minimum. "There is no harm in approving fewer than eight houses per acre where this seems desirable and the land is reasonably cheap." It is added that the giving of more land to a house will often enable a higher rent to be obtained, and all through the utterances of the Ministry there is this idea of asking a higher rent where there is better accommodation, either inside or out. It would not be true to say that the elevations of the three sets of cottages illustrated are anything but commonplace, but there is some relief in noting that the Ministry, owing to the scarcity of slates and tiles, is willing to encourage thatch in rural areas; owing to the risk of fire it should not be used in districts urban in character. It is very difficult to prevent pigsties in a village becoming a nuisance, and it is a little surprising to be told that where it is the custom to provide them there will be no objection to charging the cost of properly constructed and suitably located pigsties to the housing scheme, and letting such cost rank for financial assistance and a higher rent. The last ministerial point is a little amusing; apparently some local authority having difficulty about water, asked leave to employ a water diviner; the Ministry, however, lays it down that local authorities should obtain proper advice if they have difficulties, and should not be encouraged to employ water diviners. This first number of *Housing* has a supplement giving the general lay-out of the Swanpool Garden Suburb, near Lincoln, and photographs of some of the houses in course of erection. The pool is made a feature of the lay-out, and has a tennis court, bowling green, pavilion, and recreation ground, on its banks. The schools are on the edge of the recreation ground, and the technical institute looks over the tennis court and bowling green.

WESTERN MEDICINE IN CHINA.

THE annual account of the Peking Union Medical College contains a full account, with plans and illustrations, of the institution, which is to be fully equipped with laboratories for pathology, bacteriology, pharmacology, and physiological chemistry, and with lecture and demonstration rooms. These are lodged in separate buildings. The other buildings include a hospital with medical, surgical, and out-patient departments, and a nurses' training school, administrative offices and residences for the staff. While the buildings embody all the features of a modern medical school and hospital, the external forms have been planned in harmony with the best tradition of Chinese architecture. The college, it is hoped, will be opened to students next year. The work of the China Medical Board of the Rockefeller Foundation is set forth in the Third Annual Report, January 1st to December 31st, 1917. In addition to an account of the progress made in the creation of the proposed medical centre in Peking, particulars are given of the Shanghai Medical School which is intended to be a second medical centre in China. The Canton Hospital in connexion with the Canton Medical Missionary Society and the Canton Medical Missionary Union was established in 1835. A fair proportion of the medical staff are Chinese, and there is a training school for native nurses. The annual report for 1918 states that the two chief factors which are sapping the vitality of China are the high infant mortality and tuberculosis. The directors propose in the coming year, while plans are maturing for a thoroughly equipped modern hospital, to take steps towards combating these evils. Arrangements are being made for public lectures on hygiene, and efforts will be made to secure the foundation of the first tuberculosis hospital and sanatorium for the Chinese in China. The disturbed condition of the country brought a large number of wounded soldiers to the hospital. The number of operations performed was 2,514. A laboratory examination is made in the case of every patient admitted; the number of such examinations was 4,659. In the medical wards 1,198 cases were treated, showing a considerable increase as compared with 1918. Bubonic plague and cholera are conspicuous by their absence in the records. No case of genuine cerebro-spinal meningitis was admitted; nor is any authenticated case known to have occurred among the Chinese, although the disease was very prevalent in Hong Kong during the spring and summer.

HEALTH CONSULTATIVE COUNCILS.

THE arrangements for the appointment of consultative councils in accordance with the provisions of the Act establishing the Ministry of Health are proceeding. Nominations for the Local Health Administration Council have been invited from the Association of Municipal Corporations, the County Councils Association, the Urban District Councils Association, the Rural District Councils Association, the Association of Poor Law Guardians, the London County Council, and the National Association of Insurance Committees. The suggestions invited from a large number of medical bodies of the names of medical practitioners to serve on the Medical Consultative Council have been made; they were referred to the special medical selection committee, which has sent in a short list of names chosen from the large number submitted by the various bodies.

PLAGUE IN ENGLISH PORTS.

THE Ministry of Health announces that a master stevedore and bargeman in Liverpool, who was removed to the isolation hospital on July 11th and died on July 19th, was suffering from plague. Bacteriological confirmation of

the diagnosis was only obtained on July 26th. A mouse found dead has been proved by bacteriological examination to have suffered from plague, but dead rats, also found in the man's office and the adjacent premises, were not, on examination, ascertained to have had plague. The Ministry also announces that two officers from ss. *Framlington Court*, which arrived at Avonmouth from Montreal on July 22nd, were removed to the isolation hospital suffering from plague. The vessel reached Montreal from Alexandria, and called at Sydney, Nova Scotia, on her voyage to Avonmouth. She has been detained by the Bristol Port Sanitary Authority, and all precautions have been taken. The circumstances are being investigated by one of the medical officers of the Ministry.

GRANTS FOR MEDICAL EDUCATION.

WE learn that certain London medical schools, which have prepared schemes for the reconstruction of their clinical teaching, have been officially informed that they can count upon financial assistance from the State based upon the approved expenditure incurred in carrying out those schemes. We believe that the offer has been made to four schools, and that it is of the nature of a contingent grant in proportion to the amount provided by the school itself.

IN the advertising columns of the JOURNAL this week will be found advertisements for the posts of Deputy Medical Secretary to the British Medical Association, at a salary of £800 rising to £1,000, and of Scottish Medical Secretary of the British Medical Association, at a salary of £800.

Medical Notes in Parliament.

R.A.M.C. Officers in India.

MR. CAPE asked whether Royal Army medical officers in India who contracted to serve for the duration of the war were being detained whilst other medical officers who signed only yearly contracts were being demobilized first. Mr. Churchill: Yes, sir; officers serving under a yearly contract have been sent home from India as there is no authority to retain them beyond the period of their contract. Mr. Cape further asked whether regular Royal Army Medical Corps officers were being retained at home stations whilst doctors who took temporary commissions were being detained in India and elsewhere at great personal and financial sacrifice. Mr. Churchill replied that every regular medical officer of the Royal Army Medical Corps who could possibly be spared had been placed under orders for India, so as to release temporary commissioned officers who were serving there.

Artificial Limbs for Officers.—Sir L. Worthington Evans announced on July 24th, in reply to Major Cohen, that the cost of repairs and renewals of artificial limbs and other appliances would in future for officers, as for men, be borne by the State. The decision made some time ago as to artificial limbs had already been notified, but it was now extended to artificial appliances other than limbs. The serving officer must bear the cost of renewals and repairs until retired, but on his retirement the Pensions Department would undertake such expenses when necessary from fair wear and tear.

Medical Benefit for Service Men under State Insurance.—Mr. Newbould asked the Minister of Health, on July 28th, the number of invalided seamen, marines, and soldiers under the National Insurance Acts in England, Scotland, and Wales respectively. Dr. Addison replied that in September, 1917, special arrangements were made as to the provision of medical benefit for men invalided from war services; the approximate number of men admitted to this benefit under these arrangements was 318,000, being 270,000 in England, 28,000 in Scotland, and 20,000 in Wales. But there was an additional number of such men who, having commenced to be eligible for medical benefit before September, 1917, were not included in those figures. The number of these was not known as they were merged in the civil population.

Dental Treatment.—Mr. Sugden asked the Minister of Health, on July 28th, what steps he was taking to prevent dental caries in children under school attendance age, children in attendance at school, and adults respectively, and in view of the prevalence of dental caries, as revealed by recent examinations in adult males, whether he would issue instructions to local authorities to institute inquiries and forward recommendations thereon for its elimination. Dr. Addison replied that adequate provision of dental treatment for the whole population could only properly be introduced as an integral part of that complete scheme of national health services which would be amongst the earliest matters to be considered by the Ministry, with the advice of the consultative councils. A prime necessity, however, must be certain improvements in the existing arrangements for dentistry, suggested in the report of the departmental committee, which would require legislation in certain respects. In the meantime the provision of dental treatment for mothers and children was being developed by several local authorities under the regulations of the Ministry of Health and by help of its grants; in several school clinics by aid of the Board of Education; and in some areas in connexion with national insurance. The importance of the matter was emphasized in all suitable communications from the Ministry to local bodies.

Vaccination Regulations for the Navy.—Dr. Macnamara, in reply to Mr. J. Davison on July 28th, said he had no information as to a particular instance of alleged grievance cited by the hon. member, but the circumstances accorded with the regulations of the Admiralty, that persons serving in the navy who declined revaccination were not to land in ports where there was danger of contracting small-pox. The confinement to ships in such cases was not a punishment, but a necessary precaution to protect those who declined revaccination and their shipmates.

Indian Army Officers' Sick Leave.—Mr. Montagu, in answer to Colonel Yate on July 23rd, said that all Indian army officers on sick leave in Great Britain during the war had been admitted to the same medical treatment in hospitals or by private practitioners as British service officers. Through the generous aid of the London Tropical School of Medicine it had also been possible to arrange to send civil and military officers suffering from tropical diseases to the school hospital at Albert Docks for diagnosis and preliminary treatment. He hoped it might be possible to continue this arrangement. It secured the officer the best advice on his case and as to his treatment. The hospital charges in those cases were borne by the revenues of India.

The Physical Condition of Army Recruits.—Major Farquharson asked the Pensions Minister, on July 28th, whether it was the case that all the scientific data and documents collected by the Ministry of National Service in regard to the physical condition of recruits for His Majesty's army had now passed into the possession and custody of his department, and if so, would he forthwith transfer those documents to the Ministry of Health? Sir James Craig (Parliamentary Secretary to the Ministry of Pensions) said that the whole of the medical and statistical staff of the Ministry of National Service were transferred to the Ministry of Pensions on April 1st last. Part of that staff had for some time been engaged in the work of collating and analysing the scientific data and documents as to the physical condition of recruits for the army (as suggested by Major Farquharson), and it was considered advisable that they should bring the work with them and complete it. The Minister of Health had throughout approved of this course of action. It was hoped that the results of the work would be published in the autumn. In the meantime any information was at the service of the Ministry of Health.

Trade Marks Bill.—Sir Auckland Geddes, on July 28th, moved the second reading of the Trade Marks Bill, which he described as a modest yet important measure. It would establish a Part B in the Register of Trade Marks, and for this part registration for certain kinds of marks would be easier than for Part A. There was considerable abuse at present in the employment of trade marks, and the second part of the bill was designed to remedy this. There was, for example, the case of drugs. A very good example of the abuse was the use of the word "aspirin." It was to deal with difficulties arising from the use of names which were absolutely blocking names upon other manufactures of the same chemical substance that the bill was introduced. The bill was read a second time, and the Solicitor-General said that the various considerations could be cleared up in Committee.

Institutional Treatment for Soldiers in Ireland.—In reply to Lieut.-Colonel W. Guinness, Sir James Craig said that there were two institutions in Ireland available for discharged neurasthenic soldiers. There was no epileptic colony in Ireland with which arrangements could be made for the reception of discharged men, and it was therefore necessary to bring the few cases to England. Men were placed in asylums only if they were certified under the lunacy laws, and he was now arranging that men so certified should be treated as service patients. Special arrangements would be made with the medical officers.

Sickness Rates in Organized Industries.—Mr. J. Davison asked whether the Minister of Health could submit statistics for the United Kingdom showing separately the sickness rates obtaining in the great organic industries, such as agriculture, chemical trades (including gas workers), mining, metal trades, textile trades, and miscellaneous trades, for the years 1913–1918. Major Astor replied that statistics did not exist at present in this country as to the sickness rates in the several organized industries. In so far as information on sickness rates existed, as, for instance, in the records of friendly societies and of approved societies under national insurance, it did not afford any guidance as to the rates prevailing in the several industries, because those bodies were not organized according to occupation.

Scotland.

APPOINTMENTS TO THE NEW CHAIRS AT GLASGOW.

THE three new chairs in the University of Glasgow, endowed with a sum of £20,000 each by Mr. William and Mr. Frederick Gardiner, shipowners of Glasgow, were filled at a meeting of the University Court on July 23rd. Dr. E. P. Cathcart, professor of physiology in the University of London at the London Hospital Medical College, was appointed Gardiner professor of physiology. Professor Cathcart graduated M.B., Ch.B. in the University of Glasgow in 1900, took the M.D. in 1904, and the D.Sc. two years later. After taking his first degree he was research scholar at the Lister Institute and afterwards bacteriologist to it, until in 1905 he was appointed Grieve lecturer in chemical physiology in the University of Glasgow. In 1915 he was appointed to the London Hospital Medical School. Professor Cathcart has given particular attention to nutrition, and especially protein metabolism. Dr. C. H. Browning, director of the Bland-Sutton Institute of Pathology at the Middlesex Hospital, and professor of bacteriology in the University of London, who was appointed to the Gardiner chair of bacteriology, is also a graduate of Glasgow, taking the M.B. in 1903 and the M.D. in 1907, in which year he became assistant to Professor Muir in the pathological department of the university; in the following year he became lecturer on bacteriology. In 1911, when the laboratory of clinical pathology was opened at the Western Infirmary, he was appointed director and lecturer on clinical pathology in the university. In 1914 he became director of the newly established Bland-Sutton Institute. Professor Browning's researches have been concerned chiefly with immunity, but during the war he devoted attention to the production of antiseptics, and introduced acriflavine. Dr. Thomas Stewart Patterson, Waltonian lecturer and lecturer in organic chemistry in the University of Glasgow, was appointed to the chair of organic chemistry; he also is a graduate (D.Sc.) of the University of Glasgow, and spent three years in the laboratory of the late Professor Victor Meyer in Heidelberg. At the same court appointments were made to two new chairs in modern languages—Mr. Charles A. Martin, a graduate of the universities of Paris and Lyons, hitherto lecturer on French language and literature in the University, to the Marshall chair of modern languages (French, etc.), and Mr. Herbert Smith, a graduate of St. Andrews, to the William Jacks chair of modern languages (German, etc.).

GRADUATE MEDICAL TEACHING IN GLASGOW.

In March, 1914, at the request of the medical faculty of the University, a conference was held of the medical teaching staffs of the university and other medical schools and of the general and special hospitals of Glasgow to consider the establishment of an organized scheme for graduate classes in medicine. An executive committee was formed, and it had been intended to start such a course early in 1915, but the outbreak of war rendered postponement necessary. Another conference was held in February, 1919, between the medical faculty of the University and the general committee for post-graduate medical teaching, and it was agreed to institute an emergency course during May and June, especially for the benefit of medical men who have served in the military forces. The course was well attended by officers and ex-officers of the army and navy, as well as by medical men from America, India, the West Indies, South Africa, and China. Another course on the same lines will begin early in September. It will be essentially a practitioner's course, and will include classes in medicine, surgery, obstetrics, and various special subjects. A clinical and practical course in tuberculosis has been arranged at the Consumptive Sanatorium, Bridge of Weir, and at the Tuberculosis Dispensary in Glasgow. The opportunities in gynaecology and obstetrics will be exceptionally good, and there will be evening demonstrations in diseases of the throat, nose, and ear. The fee for the whole course is 5 guineas, but one class only may be taken on payment of a fee of 2 guineas. Full particulars can be obtained from Dr. A. M. Kennedy, Pathological Institute, Royal Infirmary, Glasgow.

THE MEDICAL PROFESSION IN THE WAR.

The Royal Faculty of Physicians and Surgeons of Glasgow has addressed a memorial to the King on the conclusion of the war, congratulating him on the lustre which the victorious peace has added to his reign. The memorial recalls that the Faculty was incorporated by the King's ancestor, King James VI of Scotland, in 1599. It expresses deep gratitude for the sympathy, encouragement, and support afforded by the King to his people, both by precept and example, throughout the arduous struggle which preceded the glorious victory finally attained. The Faculty recognized with pride the decisive part which the King's forces at sea, on land, and in the air, and in all quarters of the world, had played in achieving victory and attaining peace, and recalled with much satisfaction that the Royal Army Medical Corps, in which numbers of the Fellows and Licentiates, and Diplomates of the Royal Faculty had served, had sustained an honourable and vital part in the terrible struggle of the past years. The Faculty, in common with the medical profession, besides contributing so large a proportion of its membership to actual war service, had, by the most strenuous efforts, despite its greatly depleted numbers, maintained the necessary medical services at home with an efficiency which formed an important factor in the successful prosecution of the war.

Ireland.

DUBLIN HONORARY DEGREES.

AT the recent graduation ceremony at Trinity College a number of honorary degrees were conferred by the University of Dublin. The candidates were introduced in Latin speeches by Major Tate, F.T.C.D., Public Orator. The honorary degree of LL.D. was conferred on Field-Marshal Viscount French, "Prorex Hiberniae"; on Field-Marshal Sir Henry H. Wilson, G.C.B., Chief of the Imperial General Staff; and on Brigadier-General R. C. Jellicoe, D.S.O. The honorary degree of M.D. was next conferred upon five medical graduates of the university in recognition of their work during the war in the Army Medical Service. They were, in alphabetical order, Major-General J. J. Gerrard, C.B., at one time D.M.S. Fifth Army in France; Major-General Sir James Murray Irwin, K.C.M.G., for long D.M.S. Third Army; Major-General J. J. Russell, C.B., who, after service at Rouen, was appointed D.D.M.S. Ireland; Major-General W. T. Swan, C.B., in presenting whom the Public Orator made reference to the operations in Palestine; and Major-General Sir Harry N. Thompson, K.C.M.G., formerly D.M.S. of the First Army, and now of the Army of the Rhine.

CLOSING OF DUBLIN HOSPITALS.

The position with regard to the three Dublin Hospitals—the Richmond, Hardwicke, and Whitworth Hospitals—due to the Government's refusal to increase the subsidy to these institutions, has reached a crisis. The entire Whitworth Hospital, consisting of eight wards, has been closed, and it is possible that the Richmond also may be closed on Monday. The various traders who have been supplying provisions to these institutions since last February, and who have not received any payment on account since then, have notified the secretary, through their solicitors, that they will cease to do so. One trader, who supplies beef, butter, and other commodities, stated that his account was over £2,000, and that there seemed little prospect of payment. The extern departments of all the hospitals have been closed for some weeks. During last week only medical and surgical cases calling for treatment of short duration were received, and of other patients only those for whom payment would be made by the various Government ministries and local authorities were admitted. So far the fever hospital, which is the only institution of its kind on the north side of the city, is being kept open. A large number of nurses who were in course of training had to be sent home and servants and porters dismissed. The present condition of the hospital, owing to a dearth of patients, makes it impossible for students to receive the clinical instruction necessary in preparation for their examinations.

The Lord Mayor is in communication with the Chief Secretary with a view to his receiving a deputation on the matter during the coming week, when it is hoped something may be done to relieve the present state of the institutions, the closing of which must involve much hardship upon the poor in the north side of the city.

The statement which appeared recently in a morning paper setting out the overdraft on the hospitals' account at £6,500 was referred to by the Secretary as misleading, since it did not include the large amount of debts accumulated since February. Further, it was pointed out that the hospitals had no invested funds or capital which could be realized, and were consequently solely dependent on the Government grant. During the war a very large number of wounded soldiers was treated in these institutions.

Gynaecological Appointment in Belfast.

Mr. C. G. Lowry, M.D., F.R.C.S.I., Belfast, has been appointed assistant gynaecologist to the Royal Victoria Hospital, Belfast, in succession to Mr. R. J. Johnstone, M.D., F.R.C.S.Eng., who was recently appointed to the post of gynaecologist vacated by Sir John Byers. Mr. Lowry has had a brilliant career. After holding junior posts as resident surgeon and physician in the Royal Victoria Hospital and Maternity Hospital and demonstrator of anatomy in the university, he was elected gynaecological surgeon to the Templemore Avenue Hospital, and was appointed assistant to the professor of midwifery and gynaecology in the university, the former of which he still holds.

England and Wales.

London Water.

In his thirteenth annual report Sir Alexander Houston, Director of Water Examination, Metropolitan Water Board, states that during the year ended March 31st, 1919, difficulties were caused by the floods which occurred in rapid succession and the cold weather through which, owing to burst pipes, the consumption was greatly increased, with consequent increased rates of filtration leading to deterioration of the supply. At the Lee Bridge works, where the filter beds were temporarily inundated with flood water, the percentage of samples containing typical *B. coli* in 100 c.cm. (or less), 10 c.cm. (or less), 1 c.cm. (or less), and 0.1 c.cm. (or less), was 92.8, 53.5, 21.4, and 7.1 respectively. Taking the whole period of the war, the average quality of London water was wonderfully well maintained, but in the year under review the New River, East London (Lee), and Chelsea bacteriological results were the worst recorded. The floods were responsible in the two former, and as regards Chelsea, Sir A. Houston says the works were asked to do too much in relation to the filtration area. During the year 20,841 million gallons were chlorinated during 286 days (West Middlesex supply), and 261 days (rest of Staines supply), out of a total of 365 days. The intermissions were caused by floods, when the water was too turbid for filtration and stored water had to be used instead. The proportions were 74.3 per cent. raw water and 25.7 per cent. stored water during the year. The net saving by chlorination was approximately £10,503. The dose on the average was 1 in 2.25 million = (0.44 in 1 million), in terms of available chlorine. With bleaching powder (chloride of lime) of 33 per cent. strength this equalled 13.33 lb. per million gallons. The bacteriological results are better in winter (21.1 per cent.) than in summer (34.6 per cent.). Chlorination on the average succeeded considerably better than storage; it is practically three times superior during the winter months, when both the river water and the stored water gave the least satisfactory results. Despite the magnitude of the treatment (70 to 80 million gallons treated daily) no complaints have been received as regards taste since it was first started in June, 1916. In unfavourable years, when the unsatisfactory bacteriological results might continue for several weeks, chlorination could hardly be achieved without giving a taste to the water, and intermittent treatment would probably be necessary. Experience had shown that about April or May the results of the filtration of raw Thames water were not satisfactory owing, not to floods, but to a seasonal development of diatoms, the effects apparently of bright sunshine and increased temperature. At this period of the year fermentative changes seem to occur in the bed of the river leading to masses of suspended matter, buoyed up perhaps with bubbles of gas, rising up and rendering the water turbid. The accompanying diatoms give the material a viscid character, which tended to clog the filters. After May or June excellent filtration results might be expected until the late autumn or winter floods, when the river water filtered badly. At the date of writing last year's report it looked as if the problem of the prevention of choking of the filter beds with algal and other growths had been solved. Towards the end of April, however, the reservoir water and the upper layers of the sand filters gradually acquired a greenish tinge. The laboratory filtration figures remained good, and eventually it was found that the trouble was caused by a minute growth (Raphidium) which passed through the meshes of the laboratory linen filter despite the fact that the linen was in four layers.

Residential Treatment of Tuberculosis in London.

At the meeting of the London County Council on July 29th the Public Health Committee reported that a basis of agreement had been reached with the Insurance Committee with regard to the provision of residential treatment for insured persons suffering from tuberculosis. The Council already provides a certain number of beds in sanatoriums and hospitals; it is now to provide a much larger number, to which the Insurance Committee will have the right of nomination. The number available for insured persons who are recommended by the Insurance Committee for residential treatment is to be at least 100 more than the funds of the Insurance Committee might, according to the estimate of the Minister of Health, be expected to provide. The medical adviser of the Insurance Committee is to be a part-time officer in the tuberculosis division of the public health department of the Council, and the Council is to appoint a tuberculosis officer to act as medical adviser to the Insurance Committee with regard to residential treatment. The Council and the Insurance Committee are each to appoint three representatives to confer on any general question of administration, and disputes are to be referred to the Ministry of Health. A supplementary agreement has also been entered into whereby the Council becomes responsible for the provision of residential treatment for discharged soldiers and sailors. The cost of this is to be borne centrally by insurance and Exchequer funds. On April 1st, 564 men of this category were receiving such treatment. At present the Council finds 200 beds for cases of tuberculosis among adults, and these agreements will place upon it the responsibility of finding at least 860 additional beds. The general effect is to make the Council the central administrative body for dealing with residential arrangements for all tuberculous persons requiring such treatment through local authorities in London.

Central Midwives Board.

A special meeting of the Central Midwives Board for England and Wales was held on July 24th, Sir Francis Champneys, Bt., in the chair. The Board dealt with three final and three interim reports, and five fresh cases. Four women were struck off the roll. Most of the charges were in respect of general breaches of the rules. Immediately after the Penal Board the ordinary monthly meeting was held. Before the business was proceeded with Mr. G. W. Duncan, the secretary, who is retiring in September, was handed a gift from the present and some of the past members of the Board. The chairman expressed the great regret of all the members at parting with Mr. Duncan, and spoke in high terms of appreciation of his services. Miss Paget added a few words, laying stress on the fact of how good a friend Mr. Duncan had always been to the midwives. Subject to the approval of the Ministry of Health, Mr. Herbert George Westley, M.A. Cantab., was appointed secretary of the Board as from September 6th next at a salary of £600 per annum, with annual increments of £20 up to £800 per annum, the salary being deemed to include any war bonus awarded up to that date.

PUBLICITY ARRANGEMENTS IN COMBATING VENEREAL DISEASES.

The London County Council, at its meeting on July 29th, voted £1,407 (75 per cent. of which is returnable by means of the Government grant under the Public Health Regulations) towards the publicity arrangements of the National Council for Combating Venereal Diseases. The results of disseminating information through the press have been such, in the Public Health Committee's opinion, as to justify a continuance of the arrangement.

Correspondence.

A POST-GRADUATE SCHOOL IN LONDON.

SIR,—I earnestly hope that these saddest of all words, "too late," are not to be recorded of our much-discussed efforts for making London a great post-graduate centre, but unless those who have been at work upon the scheme vote "urgency" upon it, and get something done *and done at once*, there is grave reason to believe that it is already too late. I refer, of course to the *permanent* post-graduate scheme which has been under discussion at many meetings for, I think, two years; and beyond printed programmes and schemes we are no further forward than we were two years ago when the project was first mooted. Now we hear from America that the profession there, probably inspired by what has been done here since last Christmas by the Fellowship of Medicine, has determined that New York shall be the great medical centre of the world, and with the usual American boldness has taken steps to raise a fund of ten millions sterling for the purpose. In view of the magnificent generosity and patriotism of American millionaires—and especially when they see a chance to go one better than obsolete Europe—personally I have little doubt that, vast as the sum is, it will be raised; but even a much smaller sum will probably do all that is necessary until the American post-graduate scheme is self-supporting.—I am, etc.,

July 26th. OBSERVER.

THE TERRITORIAL FORCE MEDICAL SERVICE.

SIR,—The communications under the above heading published in your issues of May 3rd and July 19th cover a good deal of ground and may best, I think, be discussed under two headings—namely, questions which arise from difficulties inherent in a territorial system, and, secondly, matters of detail which are, as it were, accidental and capable of being dealt with and solved by internal administrative action by the administrative medical officers.

With the latter of these a great part of both communications is concerned, and I will deal with it first, prefacing my remarks by the statement that in pre-war days it was by no means essential that a medical officer should train with the unit to which he was gazetted; where and on what lines he trained in any year was a matter between him and his A.D.M.S., the latter taking care, of course, to ensure that before an officer gazetted to a field ambulance or a battalion went for annual training in, say, a military hospital, he should be reasonably proficient in his field ambulance or regimental duties.

Moreover, if a medical officer was able to give the time to it and had the inclination he could attend a training in June with one formation, and a second in August with another and quite different formation, and would be assisted to this by his A.D.M.S. This was actually done on occasion by friends of my own.

The outstanding feature of the Territorial Force was that all ranks had their training in units organized for war, the officers as regimental M.O.'s and officers of field ambulances, clearing hospitals and general hospitals, and the other ranks similarly, according to their appropriate duties, and the Regular R.A.M.C. officers of experience with whom I have discussed the matter, without any hesitation ascribed the great success of Territorial field ambulances in the field to the fact that their training throughout had been on war lines, and expressed regret that this had not been the case of the Regulars, the war formations of R.A.M.C. having no existence in the Regular service in peace time.

Many of the clearing hospitals (T.F.) were, I think, not formed until the Territorial Force was embodied; they existed on paper only, with a skeleton crew as it were, and had no previous training or even substantial existence. That being so, it is not surprising that in the early stages some of them were not a success, more particularly as they were speedily changed out of all recognition from very mobile units with equipment for 200 on stretchers to the elaborate, slightly mobile, hospitals accommodating 600 to 1,000 patients that the casualty clearing stations became.

The case of the Territorial regimental medical officer is a little difficult. He had important duties—frequently unappreciated by the combatant officers, who generally held that a man who could not shoot and had not sufficient brains to keep his equipment clean was specially fitted to be a stretcher-bearer and render first aid to his injured comrade—in connexion with his battalion during winter training and very light duties in the summer training in camp, which left him ample time in which he might attach himself to, say, a field ambulance which might be training near by, and acquire some knowledge of field ambulance duties if he so desired. For training other than in camp, arrangements should have been, and generally were, made by A.D.s M.S. for instruction of all officers through the medium of the adjutants of the schools of instruction established in the divisional areas.

Questions falling into my first group—that is, arising by reason of the Territorial Force conception itself—are very much more difficult to answer, as to do so involves the attempt to reconcile and combine incompatibles.

In its very essence the Territorial Force was strictly territorial, and derived its strength from the strong local patriotism of its members, who joined the local unit to which they were most inclined, and in connexion with which they developed a considerable *esprit de corps;* it would have been, I am sure, a disappointment to them, and felt as a grievance, if the annual training in camp had been carried out otherwise than with the units with which they had been associated in the preceding eleven months. Any departure from that system of training would, I feel sure, jeopardize the whole existence of the Territorial Force as we understand it.

Secondly, the Territorial Force was a purely voluntary association, and departures on the lines suggested by "Territorial Force" for training purposes, however desirable in themselves, presuppose that the Higher Command will have in peace time in the future the same absolute power of disposal of officers and other ranks that it has had during the recent mobilized service.

Thirdly, a "general list" for promotion, etc., presupposes perfect fluidity of the personnel composing it, to which in peace time, under a voluntary and territorial system, it is, and will be, impossible to attain.

Fourthly, the training of other ranks is fully as important as the training of the officers, and, *mutatis mutandis*, the above remarks apply equally to them.

No! I confess I see no way out of the impasse on the lines suggested by "Territorial Force." My own idea would be to retain substantially the old Territorial Force organization of local units and training, and supplement this by having large scale manœuvres, lasting, say, a month, in a suitable part of Great Britain each year, to which all formations taking part would proceed on a war footing, and in which training would be carried out as nearly as possible under active service conditions; attendance at the manœuvres training for the whole period to be compulsory for that year on all members of the formations concerned. If four divisions, with the appropriate Corps or Army troop formations, took part in such manœuvres each year, it would be possible for every Territorial to get a month's real service training about once in four years.

The difficulties in the way are, of course, great, not least being the heavy expense, but the knowledge gained would be of real value, and the fact that such manœuvres had to be carried out would be a powerful stimulus to the routine unit-training during other years.

If such a training be not possible—and I can hardly believe it would be—the only alternative, it seems to me, is the establishment of permanent R.A.M.C. schools of instruction (on the lines of the R.A.M.C. training camp at Eastbourne in 1915 and elsewhere later) in various parts, to which officers should have access at all times, and through

which should pass also as many as possible of the other ranks. This might be efficient, but would not be popular, and the Territorial Force depends for its existence on its popularity.

I have purposely said and will say nothing on the subject of pay further than to point out that in comparing Territorial Force pay with that of temporary officers the allowances in the former case should be added, and to express my conviction that as the service to the State is equal in all arms, the pay of all arms should be the same in the corresponding ranks, and that such pay should be consolidated, and all the frills and intricacies of the Royal Warrant, allowance regulations, etc., abolished entirely.

I may, perhaps, be allowed to say, in concluding, that I served as a regimental M.O. in the Volunteers and the earliest days of the Territorial Force, and later in field ambulances, one of which I commanded on active service for over two and a half years, and for the last months of the war commanded a Territorial casualty clearing station, so that my experience has been as varied probably as that of any Territorial medical officer, which must be my justification for stating my views as above on the points raised.—I am, etc.,

Stafford, July 25th. A. E. HODDER.

REFORM OF PUBLIC HEALTH ADMINISTRATION.

SIR,—As one who has for many years taken great interest in public health, and acted both as a member and also as an official of public bodies, may I congratulate "M.O.H." on his excellent letter with regard to reform of public health administration which appeared in your issue of July 19th, p. 91.

He thoroughly grasps the position of affairs, and it is obvious that the only way in which the new Ministry of Health can, as he says, be effective in local administration, in order that henceforth the numerous laws and regulations shall not only come into existence, but shall everywhere be put into effective operation, is by making the medical officer of health a State official, centrally appointed and controlled. Those of us who are holding the position of medical officer of health, one which is as a rule underpaid, with responsibilities increasing every day, were, I am sure, all disappointed that no such proposal was adopted when the Act for setting up the Ministry of Health was passed; for it is clear to all that unless the medical officer of health is an official of the Ministry, and not of the local council, things will be no better in the future than they have been in the past under the régime of the Local Government Board.

Then, again, there is another most important point, namely, what attitude is the new Ministry of Health going to take up in dealing with local councils? Is it going to continue the policy of the Local Government Board and simply advise, suggest, and recommend, knowing in nine cases out of ten its advice will be ignored?

As an instance of the opinion held by local bodies I may mention that the clerk to a rural district council said to me the other day (and, as is well known, the rural district councils are the greatest offenders in neglecting to carry out the Public Health Acts): "The Local Government Board would never enforce anything which was contrary to the wishes of the local authority."

In the county in which I live there is a splendid opportunity for the Ministry of Health to divide up a large district, so that it can be conveniently administered as "M.O.H." suggests; it remains to be seen whether the new Ministry will take active steps in the matter or simply advise, suggest, and recommend.—I am, etc.,

July 20th. ANOTHER M.O.H.

SIR,—I should like to endorse all that "M.O.H." says in your issue of July 19th, p. 91. Now that we are at the beginning of reconstruction I know that several of us working in urban districts are destined to offend certain members of our councils at no distant date by our action with regard to insanitary property. It is quite probable that the Ministry of Health will give security of tenure to all whole-time medical officers of health in the immediate future; but this measure will not remove our difficulties, inasmuch as offence given to some members of a council is calculated to keep a man at his commencing salary of £500 a year for a very long time.

The Home Office were evidently in earnest with regard to the efficient administration of the Factory Acts, and entrusted the work to their own inspectors rather than to local councils, with the result that the demands of a factory inspector are immediately complied with, and that official has nothing to fear from local influence. In the public health service things are quite different, inasmuch as men are found on almost all councils who have contrived to get there to safeguard their own private interests, the interests of commercial undertakings with which they are connected, and to see that as little as possible is spent on public health "fads."

If the Public Health Acts are to be efficiently administered, medical officers of health must be as independent of local reactionaries as factory inspectors. I have never heard of any reason as to why they should not.

With regard to what "M.O.H." says about our ill-defined duties, I should like to add that, however well-defined our duties may become, this will not prevent councils adding to them duties which should be done by a general medical practitioner, and the man who refuses to take up these new duties will find it to his disadvantage when he asks for an increase of salary. I think that a medical officer of health should confine himself to preventive work, and that vaccination should be included among his duties, but that all treatment should be given to clinical men, and should include school clinics and infectious diseases hospitals.—I am, etc.,

July 21st. S.M.O.

ENUCLEATION OF TONSILS WITHOUT AN ANAESTHETIC.

SIR,—I have read with much interest the correspondence on sudden death under an anaesthetic. The conflict of opinion as to the relative advantages of different anaesthetics and the methods of their administration leaves the matter still open. I desire to advocate operative interference without any anaesthetic, which I believe in the great majority of cases is unnecessary, and adds uncalled-for danger both at the time of the operation and subsequently—the latter from possible bronchial and pulmonary irritation, where children shortly after the operation are sent home whatever the time of the year or whatever the weather; this is necessary in school and out-patient clinics. There is also in children the possibility of delayed chloroform poisoning in cases of acidosis. During the last twenty years I have operated upon 16,000 cases, during the first period with and for the last ten years without, an anaesthetic. I am aware that objections have been raised from the humane point of view, but it is by those who have not had much experience of it in the hands of an expert.

This is neither the place nor time for any description of the method, which I hope to give fully in a subsequent communication, but I may now say that 90 per cent. of all classes of cases combined can be enucleated as well without as with an anaesthetic. After the age of about 15 one can, after injection of a weak solution of cocain and adrenalin chloride into the peritonsillar tissues, enucleate the great majority of tonsils by dissection, by the guillotine, or by a combination of the two. A small number almost completely fixed in their beds by frequent attacks of peritonsillitis and a few very nervous individuals may require, in addition to this local anaesthesia, a general anaesthetic, but such cases are not frequent.

This morning I enucleated the tonsils of a youth of 18, who desired to join the navy. After an injection into the peritonsillar tissues of ½ grain cocain, 12 minims of adrenalin chloride (P., D. and Co.), and 1 drachm of hot sterilized water, I gave it three minutes to act, during which I enucleated the tonsils and removed the adenoids of two children without an anaesthetic. I mention this to point out the ease and rapidity of the methods of both local anaesthesia and of no anaesthetic at all.

I frequently have three or four cases in succession where the children scarcely make a murmur. Of course when the child comes into the theatre crying it will continue to do so; but, generally speaking, I do not think there is any more pain than in the extraction of a tooth, and frequently not so much. There is not half the loss of blood, bleeding generally stopping in a few minutes, and the patient is generally ready to go home in half an hour.

More than two hundred medical men have had experience with me of this method and have expressed their agreement with it. If it had been universally followed the

fifty-six deaths recorded in the *Proceedings* of the Royal Society of Medicine would not have occurred. When the anaesthetic is given by a skilled anaesthetist and the operator is an expert the question is a little altered, but in hospital practice, where one is dependent upon continually changing house-surgeons, anaesthesia becomes very dangerous, whichever anaesthetic is used.—I am, etc.,

Birmingham, July 15th. FREDK. SYDENHAM.

SUDDEN DEATH UNDER AN ANAESTHETIC.

SIR,—I have followed the correspondence on this subject closely and with great interest. Dr. Levy's letter in the issue of July 26th again brings to the front what would appear to be the most important point under discussion—namely, the danger of light chloroform anaesthesia. He emphasizes this condition as being the predisposing cause of death under chloroform, the exciting causes requisite to produce cardiac stoppage being of various character. Dr. Levy confesses that his conclusions regarding safe administration are not derived from clinical experience. My clinical experience makes it very difficult for me to accept Dr. Levy's theory, and a second and recent perusal of his paper of May 1st, 1914, *Proceedings* of Royal Society of Medicine, does not help me in this respect.

Granted that chloroform is a protoplasmic poison and that chloroform anaesthesia is a toxaemia, it would indeed be strange if the organism were to suffer less from a large percentage of toxin in the blood than from a small percentage. I was unaware, moreover, that full anaesthesia prevents traumatic stimuli from reaching the nerve centres and reflexly setting up ventricular fibrillation. I understand that Crile and others use the anoci-association method of operating because general anaesthetics are of no use whatever in blocking traumatic stimuli. Crile further maintains that "deep general anaesthesia, especially with chloroform, renders an animal subject to early collapse, and decidedly less capable of enduring a protracted experiment." I confess to finding these latter teachings much more in accordance with clinical experience.

Do I really belong to "the old school" in believing that the important factor in death under chloroform is the high percentage of chloroform in the blood stream? I feel sure that experience has taught many modern anaesthetists to believe this. Cannot the large majority of fatal cases be explained by the inhalation by the patient of a strong chloroform vapour followed by spasmodic or other mechanical obstruction to the respiration, and the incarceration of this strong vapour in the pulmonary alveoli until the blood absorbs it to a toxic degree? It would at least appear to explain the accidents seen in connexion with the crying child, the spasmodic irregular breathing of the stage of excitement, the long-drawn inspiration and closure of the glottis when the anal sphincter is stretched, the reapplication of the mask laden with a strong vapour when the patient is "coming out," and the mechanical obstructions to breathing sometimes permitted with dental and tonsil cases.

An analysis of cases of deaths under chloroform gives us little help as regards this problem, for, according to the theory I support, it matters not at all whether a drachm or an ounce of chloroform had been used when death took place, strength of vapour inhaled being the all-important factor. A drachm of chloroform would be ample to produce sufficient concentration to cause death.

I consider chloroform a most valuable anaesthetic, and far superior to any other agent in certain conditions; but its toxicity is liable to produce spasm, and its low volatility and consequent slow elimination make it a dangerous drug even in the hands of the most experienced if used for full induction in all cases. Very many patients can be safely anaesthetized with chloroform alone, but the administrator should never proceed to induce anaesthesia with this agent unless he is prepared to change to ether or ethyl chloride, or both, should indications for this change arise.

Anaesthetists, I am sure, will not agree with Dr. Levy that they do not teach, and that textbooks do not teach, the value of a uniform anaesthesia and the dangers of an intermittent administration. I should like, too, to believe that I have their approval when I teach that once the patient is under, he should be kept as lightly under as is consistent with the nature of the operation and the needs of the surgeon.—I am, etc.,

Dundee, July 28th. ARTHUR MILLS.

SIR,—The majority of those who have discussed the above subject in your columns are of one mind regarding the dangers of chloroform and the relative advantages of open ether. But it is surprising to find that no one has mentioned ethyl chloride anaesthesia, save as a means of shortening the induction stage. One had imagined that ethyl chloride was widely employed as an anaesthetic for the tonsil-adenoid operation. It is safe and short, yet also sufficient.

It would appear, however, from the views expressed, that the dissection method, requiring a relatively long anaesthesia, has been adopted as a matter of routine, even in children, by several of your correspondents. Now guillotine enucleation, as devised by Whillis, will entirely remove any tonsil, if the patient is a child, and gives good results in many adult cases. "Dissection" need be chosen only for the adult whose tonsil capsules have become bound down by adhesions, as after repeated attacks of quinsy.

If, therefore, the guillotine method will suffice for the average case, why this vogue for routine dissection with its attendant anaesthetic troubles?—I am, etc.,

Edinburgh, July 26th. DOUGLAS GUTHRIE.

SIR,—Allow me to thank your many correspondents for their instructive comments on my report under the above heading. Their opinions differ in some respects, but on the whole it seems that to my questions ("Is there special danger in the operation of tonsil enucleation by dissection?" and "Is the light chloroform anaesthesia given by Junker and tube when the mouth is wide open a source of peril?") the answers are in the affirmative; and the general conclusion is that ether is the safest anaesthetic for this operation.

In his first letter Dr. Levy writes: "There is nothing unusual in the conditions attending the death." Considering that this is my first fatality in thirty years' constant administration of anaesthetics, I am surely entitled to the opinion that the conditions were distinctly unusual. He goes on to speak of my administration having been "intermitted." There is nothing in my report to justify such a statement; there was no intermission, and the administration was quite continuous, the change from a mask to a Junker tube and back again being done in a second or two. That the chloroform dose was "insufficient" is probably true, and I laid stress upon the fact that anaesthesia *must* be light when the vapour pumped through the tube is greatly diluted by air admitted freely through an open mouth and uncovered nose. It is a common experience in throat and nose work to find a temporary return from the Junker to the mask necessary in order to provide a sufficiently deep anaesthesia.—I am, etc.,

Eastbourne, July 21st. H. S. GABBETT.

HOSPITALS FOR TUBERCULOSIS.

SIR,—I should like to make a few comments on the lecture by Dr. Batty Shaw in the BRITISH MEDICAL JOURNAL for July 26th.

1. So far as my experience goes, very few early cases have up to the present been treated in sanatoriums, and I am inclined to think that, were a careful history of all cases in sanatoriums taken with a view to discovering how long before admission they had been suffering from symptoms of activity, it would be found that most were far from early, but that in those which were early the result of treatment had been excellent.

2. With regard to early infection in childhood, I would observe this may be of two kinds: (*a*) By food, in which event it will be by the bovine bacillus, and this may produce some protection in later life against the human bacillus, though of course if sufficiently large in amount it may under favourable circumstances produce any of the various kinds of surgical tuberculosis; (*b*) by way of the respiratory tract, which, if the dose be large, may have most serious consequences; this is due to infection, and is extremely likely to happen in the neighbourhood of a not careful open case of pulmonary tuberculosis.

3. I should regard the chronic case mentioned on p. 99 with a family half of whom had tuberculosis as an obvious case of home infection, and I should object to the inference that this man had necessarily a weak resistance; for it is a little difficult to believe that a man who was still alive after suffering for years from what had obviously become an extensive amount of disease was lacking in resisting power. He was, of course, very resistant, but had lacked the good fortune to have been treated in the early stages.

4. It is important to remember (*a*) that the ordinary person can deal with a small amount of infection, but that the dose of bacilli received at any one time is of great importance, and a large dose may break down the strongest resistance, and (*b*) no doubt the order in which infectious doses are received will have a bearing on the type of case resulting: if a small dose be received first, then a larger dose received later may not have such serious effects.

5. We must not forget that many cases are infected more than once.

6. With reasonable precautions a sensible person, even with open tuberculosis, can avoid infecting others, but it is surely better to treat patients before they have become infectious, and not to watch them without treating them until too late because afraid to make a diagnosis.—I am, etc.,

New Cumnock, July 27th. EDWARD E. PREST.

INFECTIVE CATARRHS—SO-CALLED "COLDS."

SIR,—We are glad to find that our original letter on this subject (in your issue of June 14th) has called forth an interesting correspondence. Apparently nearly all who have written to you (as well as others who have written to us privately) quite endorse our main contention that the terms "a cold" or "a chill" as commonly applied to infective catarrhs are unfortunate, misleading, and actually mischievous, being based on an erroneous etiological conception. As Professor Leonard Hill rightly says: "The medical profession by the use of the word 'chill' keeps up a false etiology in the public mind, while the correct and rapid diagnosis and treatment of infective disease is hampered by the belief of the profession in chill as a chief cause of illness." His witty suggestion that "a fug" would be a better term than "a chill" would, if acted upon, go a long way towards bringing home to the public the true predisposing causes of these common but serious affections.

In reply to our critic Dr. J. E. Blomfield, we would say that whilst there are, no doubt, insuperable difficulties in the way of enforcing compulsory isolation for infective catarrhs, owing to their widespread occurrence and many gradations, this does not alter the fact that they are highly infectious and often very dangerous; or that it is thoughtless and selfish in a high degree for any one who realizes this needlessly to expose himself whilst suffering in an acute stage.

It may be that the universal practice of inoculation with a suitable vaccine, say once or twice a year, will prove to be the best and most hopeful method of combating infective catarrhs; but in the meantime we would again urge that exposure to infection in hot, stuffy rooms, rather than exposure to cold on leaving such rooms, is generally the true explanation of "catching a cold"; that catarrhs abound in winter because ventilation is then less; and that pure cold air is a protection against them rather than a danger.

Dr. Blomfield fails to convince us that, in the kind of cases mentioned, there is either any definite fall of temperature or any check to elimination; and surely it is not necessary to call in the factor of cold to account for a "flare" in any chronic septic condition. The symptom-complex noted in his last paragraph is, we think, fairly correctly described by Professor Hill's term "glut of the bowels."

The traditional view, which Dr. Blomfield apparently still clings to, is no doubt firmly established and will take a long time to dislodge; but it is not necessary, in order to maintain our thesis, to contend that climatic conditions, sudden changes of temperature, or "draughts" have *no* influence on these affections. The remarkable immunity, however, enjoyed by patients in sanatoriums (especially if isolated from the outside world) and by arctic explorers, etc., also the well known fact that one may contract an acute infective catarrh at midsummer, surely indicate that it is not cold in the ordinary sense but infection which is the determining factor.—We are, etc.,

N. I. SPRIGGS.
Leicester, July 26th. C. KILLICK MILLARD,

HYPERPYREXIAL HEATSTROKE.

SIR,—I may say that I was admitted with this illness in Mesopotamia (temperature 105°) in August last, and the first symptom I felt of the illness was the constant desire to micturate, and passing of urine, a pint at least at a time; the specific gravity, I learnt in hospital, was only 1001 to 1005. There was absolute suppression of sweating for four days, but no headache and no previous illness. A blood test was negative. I do not see why these symptoms should be caused by sandfly fever alone, as my illness occurred on the ship *Syria*, going to Basrah for the first time from England, and there was no sign of malaria. I attribute my illness to the excessive moist heat alone, which I believe upset the automatic arrangement of my heat centre.

The treatment adopted was ice-water baths and about 60 grains of aspirin a day. Epistaxis was severe every night for four days during sleep, and now I feel no ill effects and have had no other illness since.—I am, etc.,

Scunthorpe, July 22nd. T. R. COULDREY, Capt. R.A.M.C.

SIR,—I am interested to read Captain Sinderson's theory, but would ask him how he can explain the following facts on the lines of his theory:

In the summer of 1917 I was M.O. to a regiment camped on the Tigris, about sixty miles above Baghdad. There were numerous cases of hyperpyrexial heatstroke, chiefly amongst the men whose duty it was to water the animals at midday. At the same time parties from the regiment had to spend about two nights a week out of camp preparing a front line. The invariable sequence was an outbreak of sandfly fever amongst the men so employed, whereas we in the camp were singularly free from this. When these lines were occupied later in the year a large number of cases of sandfly fever resulted, and these in no way resembled the hyperpyrexial heatstroke.

Whilst agreeing that hyperpyrexial heatstroke is due to a toxin, I do not think that the toxin of the sandfly is the specific one.—I am, etc.,

W. YEOMAN,
London, W., July 22nd. Late Captain R.A.M.C.(S.R.).

DENTAL CONDITIONS IN PREGNANCY.

SIR,—In the interesting article by Dr. Ballantyne, in the JOURNAL of July 26th, reference was made to the prejudice against dental treatment during pregnancy.

I entirely agree with Dr. Ballantyne that extractions and fillings during pregnancy are not dangerous. In support of this I should like to mention that two years ago Dr. Robertson, Medical Officer of Health for Birmingham, established a weekly dental clinic in conjunction with the ante-natal clinics. Since then some hundreds of expectant and potential mothers attending my clinics have been treated for extractions, fillings, and dentures, and although the treatment in many cases has been undertaken as late as the seventh month, in no case has there been the slightest untoward result. On the contrary, marked improvement in the general health has frequently been noticed.—I am, etc.,

Edgbaston, Birmingham, July 28th. ROSE L. MOLLOY.

SIR,—Dr. J. W. Ballantyne's contribution on the dental condition of expectant mothers in an ante-natal clinic is of great interest. Dr. Ballantyne, in view of his observations which disclosed that 98 per cent. of the women had defective teeth, rightly appeals for measures to be taken to save the teeth of the potential mother by all the means of preventive dentistry.

In this connexion I venture to suggest that the diet of the expectant mother should not be overlooked. Experimental evidence is gradually accumulating which shows that diets deficient in some of the food accessory factors, or "vitamines" as they are sometimes called, have a very

marked influence on the dentition. Mrs. E. Mellanby has drawn attention to the pronounced changes which the teeth of rachitic puppies display, a condition which, according to Dr. E. Mellanby's researches, would seem to be due to the deficiency in the diet of the fat soluble A accessory factor or a factor closely associated with it (*Lancet*, December 7th, 1918). Major F. M. Wells and I have shown that the pulp in the teeth of guinea-pigs subsisting on a scorbutic diet undergoes a very definite deterioration. Such condition of the teeth has also been observed by us in scorbutic monkeys (*Proc. Roy. Soc.*, B, vol. 90, p. 505).

Dr. Ballantyne, as well as other clinicians, has been impressed by the bad condition of the teeth of pregnant women. The latest researches impel one to consider the hypothesis that defective diet may be the cause of it. By defective diet I understand either one which is quantitatively inadequate or a diet which, although satisfactory in its calorific value, is deficient in some vital principles, such as the accessory factors. It is quite conceivable that a pregnant woman existing on a diet containing just sufficient accessory factors for her own metabolic requirements may incur a deficiency by giving some of it up to the developing embryo. Our experiments with guinea-pigs have shown that an antiscorbutic deficiency which hardly manifested itself by the ordinary macroscopic lesions nevertheless produced definite changes in the structure of the teeth.—I am, etc.,

London, S.W., July 29th. S. S. ZILVA.

EFFICIENT TREATMENT OF THE CHRONIC RUNNING EAR.

SIR,—Captain Wilson's memorandum on the treatment of running ears (May 24th, p. 642) is, I consider, of the greatest importance, as it brings into prominence some points most difficult to impress on the medical profession and the public.

1. The seriousness of the condition. As a rule, running ears, provided they are not so offensive as to attract attention, are lightly regarded, with in many cases ultimately most serious results, requiring urgent operative treatment.

2. The absolute necessity of skilled supervision and treatment of these cases. This point is most difficult to get the public to realize. Those who can efficiently cleanse their ears at home are few and far between (I refer to the hospital class of patient), and this entails daily attendance at a hospital, and in some cases in-patient treatment when the discharge is profuse, until the condition has sufficiently improved. I do not altogether agree with Captain Wilson's principle of swabbing instead of syringing. Personally, I prefer the combination, or I may say rather the alternation of the two. But syringing to be effective must be skilfully and carefully done.

3. As a result of (2) a very large out-patient attendance at the ear department of a general or special hospital is entailed—a point which hospital committees, and also, I must say, some members of the medical profession, do not as a rule realize.

I agree with Captain Wilson that constant supervision and treatment, if persisted in, give excellent results as regards cure of the trouble; but I consider, from a very large experience, that one will always find a certain percentage of cases in which the otorrhœa will continue and will remain foul, and the patient's health be obviously affected by septic absorption, as shown in general malaise and anæmia; in these cases—and I do not include those with recurring granulomata, headache, obvious cholesteatomata, etc., which every one will agree are in a more serious category—nothing but operative measures will avail to remedy the condition.—I am, etc.,

Southsea, July 22nd. C. A. SCOTT RIDOUT.

ALCOHOL AND VENEREAL DISEASE.

SIR,—Colonel J. G. Adami's article (BRITISH MEDICAL JOURNAL, January 25th, 1919, p. 98) on the prevention of venereal disease, which he heads "The policy of the ostrich," is most cogent, and one of the finest examples I know of the practice of taking the mote out of somebody else's eye without casting the beam out of your own. Colonel Adami recommends all sorts of valuable schemes for preventing venereal disease without condescending on the great problem What chiefly makes young men in the army consort with these ladies who give it them? a question to which the broad answer is—drink. If you cut off drink you destroy prostitution as a business proposition. Regulation will diminish venereal disease, particularly the worst sort, and is useful; so is prophylaxis; but they attack this public health problem too late. One-third of total admissions to sick list in the army in 1906 were venereal, one-third of the total days' sickness in the navy that year were venereal. The usual experience from year to year was that one-third of the illness of the navy was due to venereal disease, and I have never found any fleet surgeon to dissent from the view, which experience forced upon me, that two-thirds at least of the venereal cases occurring in the service were contracted when the patient was under the influence of drink.

Alcohol damages first the most highly developed cells in the brain, and diminishes at once self-consciousness and self-control. Hence the greater pull which flaunting prostitution makes on men who have "the drink taken." No endeavour to limit venereal disease without dealing with the drink question can be thorough. As well might one attempt to extinguish a fire due to an escape of gas, and fed thereby, without cutting off the gas. Such would truly be "the policy of the ostrich." A United States medical officer told me that in his town in Tennessee where they had, before prohibition, a "red light" district with a thousand women living in it, since prohibition these ladies had all left the town. Little has been said lately about this relation of drink and venereal disease, but it is to be remembered to his lasting honour that Dr. Grenfell of Labrador wrote a short note to *The Times* in 1917 drawing attention to the importance of prohibition in the prevention of venereal disease.

Drink they have themselves taken helps to make women prostitutes, drink men have taken is the chief adjuvant of prostitutes. It is hard to get this argument stated in the press of this country, which seems to me to be very tender with the arguments against drink. Women are unconsciously more friendly to men who have taken a little drink and have so become more susceptible, more forward. But, wine is a mocker, and often cheats women of the prize, marriage, for which they are angling. It makes the men less persevering, and often ultimately unmarriageable.

There are other things worse than prostitution; those also are fed by drink. All of us who regularly read *The Times* must remember the astonishment with which we first there read the word syphilis. That marked a brave attempt to wake up England in regard to this danger. It is still necessary to wake England up thoroughly. There are enormous difficulties in the way, silent, unconfessed, but with enormous inertia resisting movement. So true is it that where your treasure is there will your heart be also.

I am sorry that, as I am at present abroad, I send this note so late.—I am, etc.,

W. E. HOME, M.D., B.Sc., D.P.H., M.R.C.P.E.,
Marseilles, June 30th. Fleet Surgeon R.N.(ret.).

THE FUTURE OF THE MEDICAL PROFESSION.

SIR,—There is no longer a question of whether there shall be state medical service—there is already a state medical service. The question now is how far state control of medical practice shall extend. I make a few tentative suggestions.

I would propose that state medical service should be divided into three classes: (1) Consulting and specialist; (2) whole time; (3) part time.

1. Consulting service to be obtained by request of a general practitioner, or of a patient with his sanction.

2. Whole-time panel practice, list to be limited to 2,000 at 10s. capitation, midwifery cases to be taken, and some extra fees to be arranged.

3. Part-time panel practice, limited to 1,000. Midwifery engagements to be optional.

Poor Law district work should be transferred to panel surgeons. Poor Law hospitals should be brought up to date as regards staff and equipment.

This scheme is only a skeleton. It might serve for the nucleus of a medical service which would be elastic and efficient. Of course many details would require thinking out, such as, for instance, pathological and research laboratories, the relation to voluntary hospitals, the arrangements for tuberculosis and venereal diseases, etc.,

but the main principles are simple. Either the future of medical practice must be moulded by intelligent prevision, or it will shape itself on chaotic lines by a process of evolution. We need a statesman who will consider the needs of the people, and also will listen to the voice of the profession as a whole, who will act as our pioneer in still unexplored regions of preventive and clinical medicine.—I am, etc.,

Loughborough, June 28th. J. B. PIKE.

THE NEW R.A.M.C. CONTRACT.

SIR,—I notice in the recent number of your JOURNAL an article intimating that the response of medical men to the War Office appeal for doctors has not been satisfactory.

May I point out that perhaps the authorities have no idea how bitter is the feeling, among Territorial and Special Reserve medical officers, at the difference in treatment recently meted out to them as compared with the temporary R.A.M.C.? Letters have appeared, representations made, but all to no purpose.

If the War Office were to supplement gratuities of all Territorial and S.R. medical officers (and so compensate them for the monetary loss they have suffered by being a Territorial or S.R. instead of a temporary R.A.M.C. officer) —making their gratuities up to a total of, say, £500 for four years' embodied service such as a naval medical officer gets after the same period, or at the same rate as a regular R.A.M.C. gets after eight years' service, it would, I feel sure, help to mitigate some of the sore feeling that is so prevalent at present, and might encourage re-enlistment. I notice you call attention to the disadvantage under which junior officers of the Territorial and Special Reserve R.A.M.C. have served in the war. Why, then, if such disadvantage is recognized is it not made good to them, especially if the Government needs their further help?—I am, etc.,

July 28th. CAPTAIN R.A.M.C.T., LATE SURGEON R.N.

EDINBURGH UNIVERSITY ROLL OF HONOUR AND WAR RECORD.

SIR,—It is proposed to publish a roll of honour and war record of the University of Edinburgh, and a letter asking for information as to war service, promotions, honours, etc., with dates, is being sent to all graduates and to the relatives of the fallen whose addresses are known. The number of medical graduates who have given their lives is very considerable, and it has been found very difficult to obtain the addresses of their relatives. It would be a great favour if this communication could be inserted in your widely circulated journal, so that those interested may become aware of the forthcoming publication, and may communicate particulars to the undersigned—

JOHN E. MACKENZIE, Major,
Editor.

University of Edinburgh,
July 15th.

REPRINTS.

SIR,—I should like to make a suggestion to those of your readers who order reprints of their papers, which would, if adopted, be a great boon to libraries, and at the same time would have very distinct advantages for the authors. Let the author, as early in his career as possible, decide on a convenient size (usually a demy octavo), and when ordering reprints ask the printer, without altering the set of the type, to make his reprints on paper of that size. If the formes are not altered the extra cost will be trifling, and those who receive his reprints from time to time will be able to bind them up into convenient volumes. I frequently receive batches of reprints varying in size from duodecimo to imperial octavo, and it is difficult to classify these varying sizes as one would like, and utterly impossible to make a decent binding of them.—I am, etc.,

J. Y. W. MACALISTER.

The Royal Society of Medicine,
1, Wimpole Street, London, W.1, July 7th.

ACCORDING to *Italia Sanitaria* of Rome the number of officers of the Italian medical services who perished in the war up to January 20th, 1919, was 376. Of these 317 belonged to the army, 10 to the navy, 42 to the Red Cross, 2 to the Order of Malta, 3 to the mercantile marine, and 2 to the colonial service. In addition to these, 216 medical students lost their lives.

Universities and Colleges.

UNIVERSITY OF OXFORD.

DIPLOMA IN OPHTHALMOLOGY.

THE following have satisfied the examiners: H. W. Archer-Hall, E. M. Eaton, V. O'Hea-Cussen, W. H. Kiep, W. C. Souter.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on July 24th the following medical degrees were conferred:

M.B., B.CH.—E. N. Showell-Rogers, H. L. Cronk.
B.CH.—F. N. Y. Dyer.

UNIVERSITY OF LONDON.

AT a meeting of the Senate held on July 24th the title of Emeritus Professor of Anatomy was conferred upon Professor Sir G. D. Thane, LL.D., F.R.C.S.

The following candidates have been approved at the examinations indicated:

M.D.—*Branch I, Medicine:* F. C. H. Bennett, Dora C. Colebrook, C. Cooke, Annie M. Forster, G. E. Genge-Andrews, *Mary E. Harding, J. S. H. Lewis, H. A. Moody, J. A. Ryle (University medal).

Branch II, Pathology: G. S. Wilson.

Branch III, Mental Diseases: M. Culpin, C. W. Forsyth, T. C. Graves.

Branch IV, Midwifery and Diseases of Women: J. A. Ferrière, J. J. Jhirad, M. H. Oldershaw, V. J. E. C. del S. Perez y Marzan, C. G. Richardson.

M.S.—*Branch I, Surgery:* W. B. Gabriel, L. G. Phillips.

* Qualified for University medal.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.

The following have been appointed demonstrators in the subjects indicated:—Practical Surgery: W. Girling Ball, F.R.C.S., and J. E. H. Roberts, M.B., B.S., F.R.C.S. Operative Surgery: Sir C. Gordon Watson, F.R.C.S. Midwifery: M. Donaldson, M.B., B.Ch., F.R.C.S. Biology: W. A. Cunnington, M.A., Ph.D. Chemistry: J. H. Johnston, M.Sc., F.I.C. Anatomy: J. L. Shellshear, M.B., Ch.M. (senior demonstrator); R. A. Ramsay, M.Ch., F.R.C.S., H. E. Griffiths, M.B., F.R.C.S.; J. B. Hume, M.R.C.S. Physiology: J. Trevan, M.B., B.Sc., M.R.C.P. (senior demonstrator); N. B. Dreyer, B.A., and R. Hilton, B.A. Pathology: R. G. Canti, M.B., B.Ch.; T. Jockes, M.B., and E. G. D. Murray, M.A.

T. H. G. Shore, M.D., M.R.C.P., has been elected curator of the museum.

UNIVERSITY OF DUBLIN.

THE following degrees were conferred on July 4th:

M.D.—J. V. Cope, G. P. Elford (*in absentia*), Evelyn Fisher, E. O. Marks, F. J. Smith, A. G. Varian, Hilda M. Varian, A. H. Watson.

M.B., B.CH., B.A.O.—A. R. Aidin, C. G. Ambrose, F. J. G. Battersby, C. D. Brink, J. C. J. Callanan, P. Casey, J. H. Coolican, F. J. Dymoke, G. FitzM. Keatinge, A. G. D. Magee, L. J. Nugent, J. S. Quin, C. J. Quinlan, Gertrude Rice, Mary C. Sheppard, A. H. Thompson, H. B. van der Merwe, V. G. Walker, T. J. R. Warren.

UNIVERSITY OF SHEFFIELD.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—W. Collins, R. E. Ford, B. H. Greaves, Dorothy E. Mathews, R. E. Pleasance, F. Roper, L. Samuels, F. L. Smith, Alice White.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on July 24th, when Sir George Makins, G.C.M.G., President, was in the chair.

H.R.H. The Prince of Wales.—The President reported that the Prince of Wales had consented to become an Honorary Fellow of the College; he was therefore elected. The President stated that His Royal Highness hoped on his return from Canada towards the end of the year to attend at the College to receive the diploma.

His Royal Highness the Duke of Connaught, Colonel-in-Chief of the Royal Army Medical Corps, had also consented to become an Honorary Fellow, and was duly elected.

Diploma of Membership.—Diplomas were granted to seventy-eight candidates found qualified at the recent examinations.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE following candidates have been approved at the examination held at the termination of the sixtieth session:

*W. H. W. Cheyne (Duncan and Lalcaca medals), *J. I. Connor, *G. S. Glass, *R. D. FitzGerald (Straits Settlements Medical Service), *Surgeon Lieutenant Commander T. C. Patterson, R.N., Captain W. C. Spackman, I.M.S., P. A. Dalal, A. C. Price, Captain H. N. Stafford, R.A.M.C., J. T. Smeall, Miss Y. H. Hoashoo, Miss S. A. Finch, Miss A. Bramsen, N. B. Watch, H. C. Gilmore, S. Foskett, J. W. Scharff, J. P. Tibbles, Miss E. Warren, B. Mountain, B. B. Jareja, C. Farrell, A. R. Neckles, J. A. Liley.

* With distinction.

Obituary.

W. H. PEILE, M.D., D.P.H.

MANY old students of University College Hospital will hear with regret the news of the death of William Hall Peile, son of the late Sir James Peile of the India Office, which took place at Sidmouth on July 14th. Having spent some years at Cambridge and taken his Arts degree there, he joined the hospital at a rather later age than the majority of students. He was most thorough and careful in his work, and after obtaining the diplomas of M.R.C.S. and L.R.C.P. in 1897 he held the resident posts of house-physician, house-surgeon, and senior obstetric assistant. He later took the degree of M.D. at Dublin University and the D.P.H. of the English Royal Colleges.

Never of robust constitution, his health prevented him from gaining the position in the profession to which his ability entitled him, and he was induced to spend several years cruising in various parts of the world. Finally he married and settled at Sidmouth, where as medical officer of health he devoted himself to improving the sanitation of this lovely little seaside resort. Some workmen's dwellings erected by the local council on his advice remain as evidence of his work. Peile's health, unfortunately, broke down, and he was obliged a few years ago to relinquish this post. He contributed some interesting articles to the medical journals. Those who had the privilege of knowing him have lost a staunch friend and one whom they will always remember as a true type of a cultured English gentleman

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CAPTAIN CLEMENT PERRONET SELLS, M.C., R.A.M.C.(T.F.), died at the Royal Air Force Hospital, Swanage, on July 4th, aged 29. He was the son of the late Vincent Perronet Sells, of Highfield, Oxford, and was educated at Oxford and at Middlesex Hospital, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1916. He joined the R.A.M.C.(T.F.) on August 23rd, 1916, was attached to the R.A.F. from April 1st, 1918, and received the Military Cross on June 3rd, 1918.

DR. THOMAS ADDIS EMMET of New York, who died on March 1st, was born on May 29th, 1828, in Charlottesville, Virginia. He was the son of John Patten Emmet, professor of chemistry and materia medica in the University of Virginia. He graduated at the Jefferson Medical College, Philadelphia, in 1850, and after many years' service as assistant became surgeon-in-chief to the Women's Hospital in 1861, an appointment which he held till 1872. He was the author of *The Principles and Practice of Gynaecology*, which went through several editions. Dr. Emmet was a great collector of American prints and autographs and extra-illustrated books. One of his collections was sold for £30,000, another for £14,400. He left a fortune amounting to £200,000.

PROFESSOR HERMANN OPPENHEIM, the well known neurologist, who died recently at Berlin, was born in that city in 1858. He studied medicine at Goettingen, Bonn, and Berlin, where he came under the influence of Westphal. He became assistant in the neurological clinic of the Charité in 1883; in 1886 he qualified as *privat-docent*, and in 1893 became professor. He published papers on traumatic neuroses, syphilitic diseases of the central nervous system, tumours of the brain, encephalitis, and cerebral abscess in the *Charité Annalen*, *Virchow's Archiv*, and the *Zeitschrift für Nervenheilkunde*. He was also the author of a textbook on nervous diseases published in 1894, well known in its time; a second edition appeared in 1898.

MAGNUS GUSTAF RETZIUS, the famous Swedish anatomist, died at Stockholm on July 21st, aged 77. He was the son of another distinguished anatomist, Anders Retzius, and was born at Stockholm in 1842. After studying at Upsala and Stockholm he graduated at Lund in 1871. In 1877 he was appointed extraordinary professor of histology in the Carolina Institute of Stockholm, becoming ordinary professor in 1889. He resigned in 1900, and devoted the rest of his life to research. In the pursuit of knowledge he travelled widely in Europe and America, and by his work in anatomy and anthropology won many distinctions, including the Monthyon prize of the Institute of France. He published his results in monographs on the organ of hearing in bony fishes (1872); the anatomy of the nervous system and the connective tissue (in collaboration with Axel Key (1875–1876); on Finnish skulls (1898); the organ of hearing in vertebrates (1881–1884); on the macroscopic anatomy of the human brain (1896); on old Swedish skulls (1899), and kindred subjects. The last of a series of handsome and beautifully illustrated folios appeared in 1914. Retzius was a Fellow of the Royal Societies of London and Edinburgh, the American Philosophical Society, the Académie des Sciences of Paris, and many other learned bodies.

The Services.

MENTIONED IN DISPATCHES.

IN a special Supplement to the *London Gazette*, issued on July 28th, General Sir C. C. Monro, Commander-in-Chief, India, relates particulars of the part played by India in the various operations in the recent war. The list of those mentioned for particular services, appearing as an appendix to the dispatch, include six members of the A.M.S. and R.A.M.C., four officers of the I.M.S., and two Indian medical practitioners.

Major-General P. Hehir, C.B., C.M.G., I.M.S., was reported as wounded in the casualty list published on July 8th, presumably on the Indian frontier. This is the first instance throughout the war of a medical officer of this rank being wounded.

Lieutenant Hari Das, I.M.S. (temp.), attached 1/9th Gurkhas, is reported as wounded, in the casualty list of July 26th.

Medical News.

AN organization of medical practitioners has been formed in New York to start a movement to raise £10,000,000 for the purpose of making New York the medical centre of the world.

DR. HENRY STRONG, J.P., of Worthing, some time of Croydon, left £47,750. He directed that his property should be divided into twenty parts, six of which are to be given to Epsom College, two to the Croydon General Hospital, and the remainder, subject to a few personal legacies, to various charitable institutions.

THE Summer School of Civics and Eugenics at Cambridge will be opened by Viscount Haldane on Saturday evening, August 2nd. The address of the Secretary of the School is, University Arts School, Bene't Street, Cambridge.

LAST week Major-General Sir Robert Jones, C.B., entertained a large party of friends to dinner at the Savoy Hotel, London, to meet King Manuel. The occasion was the approaching cessation, owing to the declaration of peace, of King Manuel's active share in the work of the military orthopaedic department. Various speakers—Sir Robert Jones, Sir Arthur Stanley, Lieut.-General Goodwin, Sir Harold Stiles, Lord Knutsford, and Sir Robert Hudson, chairman of the Joint Finance Committee of the British Red Cross Society and the Order of St. John—bore testimony to the value of the work done by King Manuel in influencing public opinion, by acting as liaison officer between the orthopaedic department and the Joint War Committee, and by his own personal labours at the Shepherd's Bush Military Orthopaedic Hospital. In replying, King Manuel spoke in the warmest terms of Sir Robert Jones and thanked all those with whom he had been associated in work for the disabled man during the last four years.

FLEET SURGEON ALFRED T. CORRIE, R.N., has been elected a governor of St. Bartholomew's Hospital, London.

AT the matriculation examination of the University of London in June, 226 candidates passed in the first division and 1,188 in the second division.

THE KING, on the occasion of his visit to the Guildhall on July 29th, knighted Dr. W. R. Smith, one of the Sheriffs of London.

THE Wellcome Historical Medical Museum will be closed for cleaning and redecoration from August 9th until the end of September.

THE King of Italy has appointed Dr. A. F. Cameron to be a Chevalier of the Order of the Crown of Italy in recognition of valuable services rendered during the war.

THE special course of instruction in the surgical dyspepsias will be repeated at the London Hospital Medical College by Mr. A. J. Walton, assistant surgeon to the hospital. The lectures, to which members of the profession will be admitted on presentation of their cards, will be given on Mondays and Fridays at 4.30 p.m., commencing on August 1st.

BEFORE his death on the field of honour, M. Albert Gauthier-Villars had decided to publish an annual calendar of the scientific world. It was intended to replace the German *Minerva*, and the title was to have been *Universitatum et eminentium scholarum index generalis*. The work is to appear under the direction of Professor R. de Montessus de XX Ballore of Paris.

THE annual report of the Imperial Cancer Research Fund shows that the work of the laboratory during the past year has been a continuation of the programme laid down at the beginning of the war. Sustained effort on a subject divorced from the immediate national interest became increasingly difficult as the war approached its culmination, the main efforts of the staff being concentrated on war problems. But there is a promise of a return to the special work of the laboratory during the coming year. Dr. Bullock has returned from the army, and Dr. H. A. Drew has become a regular member of the staff. A report on the special war work is being prepared by the director, Dr. J. A. Murray, and will shortly be issued. The treasurer, Sir Watson Cheyne, observes that as the scientific staff is now nearly at full strength, and it is confidently expected that researches will be energetically resumed, it is necessary that the fund should be generously supported by the public. Owing to the heavy death rate from malignant disease it must surely, he says, be to the the interest of the community that the fund should not be starved.

ON the invitation of the Rumanian Government a mission consisting of representatives of all the faculties of the French Universities and of the Collège de France went recently to Bukarest. The object is to reorganize teaching in accordance with French methods. The president of the mission is M. Lucien Poincaré, vice-rector of the University of Paris, and among the members is Dr. Balthazard, professor of forensic medicine in the faculty. A medical society on the model of the Société médicale des hôpitaux de Paris has recently been founded at Bukarest. Its proceedings will be published in French. Professor Nanu-Muscel, the first president, in his opening address paid a warm tribute to the work done for Rumania by French doctors.

Letters, Notes, and Answers.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

INCOME TAX.

"TAXIBUS" inquires as to the legitimacy of deducting the cost of an additional motor car for income tax purposes.

*** The deduction is not permissible unless the old car is scrapped or sold, because the purchase of a second car is an outlay of further capital on the practice. If our correspondent's intention is to retain the old car for a limited period only, we suggest that when that car is sold the one now purchased might be regarded as having been a replacement of the old car, and a deduction claimed for income tax purposes in the year of sale. The practice, which appears to be growing, of retaining an old car for emergency purposes when a new car is purchased, gives additional weight to the hardship imposed on members of the medical profession by their legal inability to claim the anticipatory allowance for wear and tear that is accorded to business men and manufacturers, and it is hoped that this very legitimate grievance will not survive the forthcoming reorganization of the income tax.

LETTERS, NOTES, ETC.

MEDICAL ASPECTS OF PROHIBITION.

DR. H. N. ROBSON (Bournemouth) writes: Many doctors now realize that hereditary disease can cause instability of mind that leads to peculiar or extreme views and actions. May not this be the probable origin of some of the rabid socialists, conscientious objectors, drug-takers, and prohibitionists who seem mentally incapable of keeping in the middle of the road? The Anglo-Saxon races for years put down all laws for the prevention of venereal diseases and now produce most of the prohibitionists; is this cause followed by effect? Perhaps doctors in asylums and alienists might favour your readers with some observations on the subject which would be interesting to sociologists.

WAR MEDALS AND HOME SERVICE.

"1914 CROCK" writes: I should like to dot the i's and cross the t's of "A. M.'s" letter on medals, which applies to all branches of the service. The most iniquitous thing is that the conscript, who was hauled into the service shortly before the armistice, and who spent only one day before the armistice at some cushy overseas base, where even the air-Hun troubled not, is to be given the Service Medal, but no ribbon is to be worn by the men who volunteered for general service in 1914, and who, having broken down on the East Coast through air-raids, tip-and-run bombardments, bad billets, etc., were afterwards relegated to Home Service for the duration. Apart from sentiment, this treatment is likely to affect recruiting for the new Territorial Force, as, judging from remarks heard on all sides, most people will "wait to be fetched" next time.

PENSIONS MEDICAL BOARDS.

"P." writes: The interesting article in the JOURNAL of July 12th raises many points in connexion with the medical department of the Pensions Ministry. Attention might have been drawn to other matters. In the first place, too much stress cannot be laid on the necessity for decentralization wherever it is at all possible.

One of the most essential things is for each area or regional officer to have an advisory board consisting of the leading consulting medical men practising in those parts; they should meet at frequent and regular intervals, and the selection of medical officers should be entirely in their hands; this would mean that only the most suitable and best experienced men would sit on the boards, and this would give confidence to the general public as well as do justice to the pensioners up for examination. Further, in every large city there should be boards of appeal, consisting of consultants only, who would deal with cases sent to them by the ordinary boards for an opinion or in case of appeal by the individual or perhaps higher authority.

Then, again, the question of granting a gratuity should be made use of in settlement of all claims where the applicant is willing to accept this method.

As to the selection of medical officers for the boards, it is stated that only medical men are to be accepted for Ireland, Scotland, or Wales, who are of those nationalities; if that be so, the same rule should apply to England, and preference be given to Englishmen.

In the case of establishment of hospitals under the Pensions Ministry, there are many hospitals now being closed by the army authorities which might well be taken over as going concerns.

MEDICAL FEES.

"MOUNTAINEER" writes: Dr. Geoffrey Price is perfectly right, and the British Medical Association should take a definite lead in this matter. Even with 50 per cent. increase of fees we shall not be so well off as we were before the war, as our salaries of chauffeur, dispenser, servants, drug bill, petrol, to say nothing of income tax, have so largely increased. Another matter is that for panel work "mileage" should be modified to meet the nature of the district. Personally I live in a very hilly country, and would rather motor four miles on a flat road than one here.

APPLIED PHYSIOLOGY.

DR. JOHN HADDON (Hawick) writes: The abstract of Professor Starling's lectures on the feeding of nations (given in the BRITISH MEDICAL JOURNAL of June 21st) may be taken as giving the most up-to-date views. He said that, "although man's first care had always been to provide his daily bread, the science of 'dietetics' was of comparatively recent origin." It may seem presumptuous on my part to venture to criticize Professor Starling's views as to food, but no man in the profession can have had more personal experience as to the physiological action of different foods than I, and I feel sure that we can have no science of dietetics until we know the physiological action, as well as the chemical constitution, of the common articles of diet. Calories are supposed to depend on the chemical constitution of a dietary, but they give no clue to the physiological action of any food. When we have a true science of dietetics we will be able to prescribe a diet as easily as we can now prescribe drugs, and with more beneficial and lasting results. Hippocrates said the aim of the physician should be to find out a diet suitable to the sick, but it seems to me to be the duty of the State to find out a diet that will prevent disease, which it ought now to be able to do, seeing we have got a Ministry of Health. Professor Starling

evidently thinks that fat is absolutely necessary in a dietary that will preserve health and vigour; nevertheless, he admits that when our population was incommoded by a temporary shortage in fats during the early part of 1918 no ill effects were noticeable in health or efficiency. Such a fact might suggest that fat may not be necessary. I have lived for years without any fat in my dietary and never was more fit, so that it is quite a mistake to suppose fat is a necessary ingredient; but when I was a great invalid—a victim of influenza—I discovered, when dieted at a hydropathic, that it was animal food that was making me ill. That was in 1896, and I have been a vegetarian since then. Now, however, at 73 years of age, I am going to try to be a fruitarian, for I believe that man is a frugivorous animal, as our comparative anatomists have all along taught.

A PEACE MEMORIAL.

TEMPORARY SURGEON LIEUTENANT R. T. BAILEY, M.B., R.N., writes to suggest that the permanent memorial proposed to be established to perpetuate the memory of peace should take the form of the erection of a large, well appointed, and finely designed hospital for children on a suitable site in the neighbourhood of London; it should be large enough to enable all classes of children to receive treatment. Such a hospital, combining the functions of an actual children's hospital for acute as well as chronic cases, and suitable also as a convalescent centre, would be a great boon. He urges that apart from the sentiment of the nation in having a beautiful living memorial of its triumph in contrast to statuary or even a cathedral, such an institution would be a monument of national economy. It would be a fitting living memorial of sacrifice in the past, and be a symbol of resurrection for the people of the land.

DURATION OF GESTATION.

DR. P. H. WALKER (Mqanduli, Tembuland) writes: The memorandum under this heading in the JOURNAL of March 22nd invites criticism. As regards the preliminary postulates, it is common for the mother of a young child to become pregnant without any sign of menstruation, and I have known of one woman who never menstruated though she had children. In all such cases there must have been periodic shedding of the uterine mucosa. Hence it follows that the haemorrhage, when not accentuated by disorder of bowels, liver, or heart, is only the measure of the amount of superfluous blood, and of the amount of engorgement of the uterus in excess of what is absolutely necessary. The fact that menstruation may happen in the first two months of pregnancy shows that there can be a partial shedding of the mucosa, and indeed must be, in cases of superfetation; but that is in accordance with the new teaching that the decidua is embryonic.

Conception only occurs during the rut of animals, and it could occur during menstruation but for Jewish law and our sense of cleanliness. Conception—that is, the suction of the semen into the Fallopian tubes—in normal circumstances happens just before or soon after menstruation, while the centre in the spinal cord is keyed up to the proper pitch. Pregnancy implies co-operation. Months of cohabitation may pass without its happening. The sexual nervous apparatus is a delicate machine, and dread of the result may inhibit the maximum reflex and prevent impregnation as effectively as any contraceptive. That is one reason why extensive and independent migration of the spermatozoa seems so improbable. But desire in woman is not only periodic but cumulative, and after months of repression a time is apt to come when Nature asserts herself regardless of consequences.

The cessation of pain in ovarian dysmenorrhoea on the appearance of the discharge implies the coincident rupture of the Graafian follicle and relief of the ovarian tension. Lawson Tait's idea seems incredible, that ova drop out of the ovaries at any odd time independent of the periodic turgescence. When a woman once only in an otherwise normal existence has membranous dysmenorrhoea, and the amount of discharge is just as usual, it seems good enough evidence that the uterus discards a similar amount of epithelium at other times, but in particles instead of in mass. The menstrual phenomena are not vestigial, and one cannot suppose them purposeless. If the periodic turgescence is not to burst the follicle, to erect the fimbriated end of the tube, and to prepare the soil for the implantation of the fertilized ovum, what is the use of it all?

How long the mucosa continues fit for the attachment of the ovum is uncertain—probably two weeks at most. At least, it must be unfit for some time towards the end of the interperiod, as otherwise there would be no need for renewal; and during an ordinary period of three to seven days the ovum is still in the tube. Prolonged haemorrhage implies a morbid condition incompatible with pregnancy. Now, if ordinarily the tubal cilia take ten days to sweep out the ovum into the uterus, with a pre-menstrual conception implantation might take place by the eleventh day, irrespective of the length of the period. In a post-menstrual case it might be a good bit later. The date of implantation would be most useful for calculation if it could be ascertained—just as we count from the day of setting eggs under a hen and not from when they were laid. But it should be remembered that if in human incubation a fortnight is about the limit of unforeseen error, in the case of the hen there may be forty-eight hours between the first and last chicken hatched out, which would be equivalent to twenty-six days in the human scale. It seems probable, however, that the length of gestation is governed by the rate of growth and the other factors rather than the date of implantation. At the same time, if a pre-menstrual conception causes fertilization almost directly on extrusion of the ovum and six to nine days elapse when it is post-menstrual, the interval is long enough to permit some amount of molecular change in the unfertilized ovum, and that, I believe, determines the sex. After about thirty years' observation I am still convinced that post-menstrual conception always results in a female.

ENDEMIC GOITRE AND POLLUTED WATER.

CAPTAIN OLIVER LATHAM, A.A.M.C., A.I.F. (Pathologist, No. 1 A.G.H., Sutton Veny), writes: On revisiting some tenant farmer friends of thirty years' standing in the Dublin Mountains, I was much interested to find among the eighteen children of three cousins who married three sisters of a family—all neighbours—four marked cases of presumably endemic goitre. The drinking water is obtained from surface wells, which in summer become deeply contaminated with cow dung, geese droppings, etc. The farm women have often admitted that they did not care to drink the water in a drought. Having read a little of McCarrison's work, I am interested to know whether any endemic centre in Great Britain has been made the subject of an inquiry on the lines of his teaching, and if so whether I could get in touch with the investigators. I could only suggest boiling all drinking water or drinking rain-water collected from the roof.

CONSTIPATION AND POSTURE.

DR. A. HUMPHREY DAVY (Bournemouth) writes: The textbooks on the treatment of constipation do not lay sufficient stress on the anatomy of the large bowel. We know that in the erect position peristalsis in the ascending colon has to contend with gravity. When lying on the right side peristalsis in the transverse colon is also opposed by gravity. How are these difficulties best obviated? On going to bed patients should always lie on the right side. By doing so peristalsis is not opposed by gravity, and the contents can move along from the caecum to the hepatic flexure. During the night or early morning people often awake; the patient should then turn over on the left side, when gravity will help (and not hinder) peristalsis in the transverse colon to move the contents to the splenic end. On rising in the morning gravity will help peristalsis to send the contents down the descending colon to the sigmoid flexure and thence to the rectum. To relieve cardiac work people are often advised to lie down on the right side on going to bed. The importance of doing so is equally indicated for the working of the large bowel.

THE UNION OF RED CROSS SOCIETIES.

PROFESSOR GIOVANNI D'AJUTOLO of Bologna has published a pamphlet (Bologna: Tipografia di Paolo Neri, MCMXIX) in which he claims to have been the first to propose the formation of a central committee which should co-ordinate the work of Red Cross societies throughout the world. The idea was suggested to him by the terrible earthquake in Calabria and Sicily, which caused loss of life and widespread suffering that might have, to a large extent, been prevented by a properly organized system of assistance. His views were set forth in a number of articles published in various Italian journals, the first of which appeared at the beginning of 1909. They are reprinted with full references in the pamphlet. From a summary of the details of his scheme published in the *Gazzetino* of Milan, May 31st, 1909, it seems to us that Dr. D'Ajutolo is justified in his claim to have anticipated Mr. Henry Davison's conception of a union of Red Cross societies.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 34, 38, 39, 40, 41, and 42 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 35, 36, and 37.

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